

Flow

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SEPTEMBER, 1931

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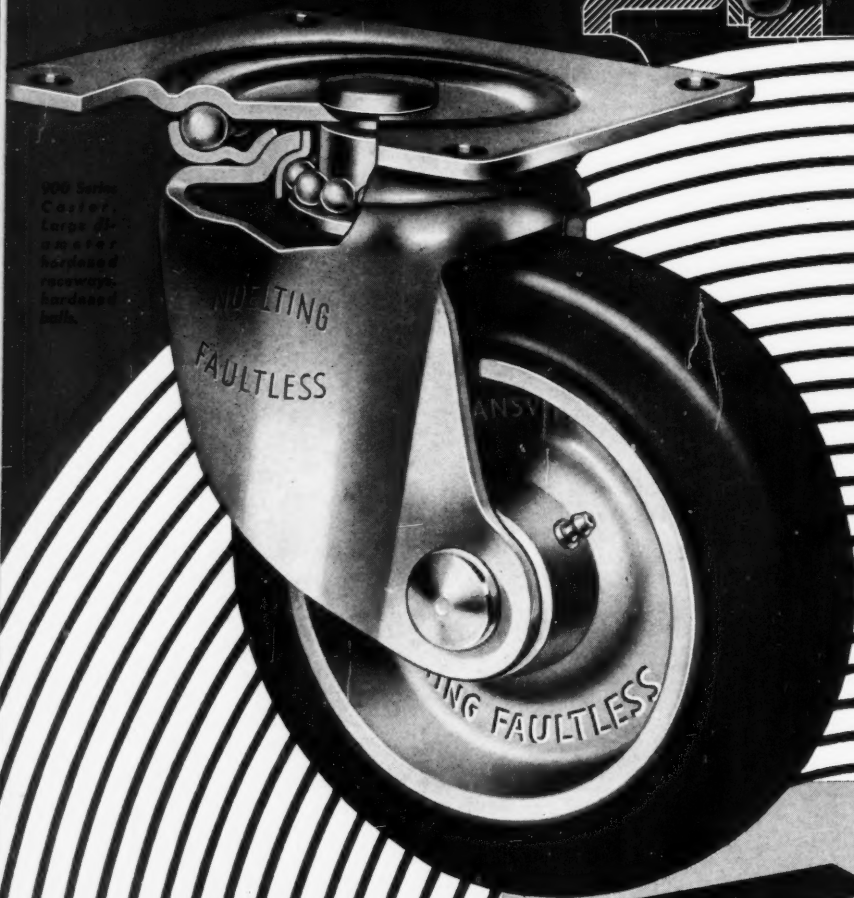
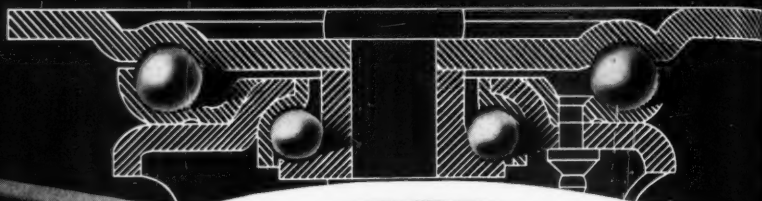
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*A new section
starting this
month...*

FLOW REACHES INDUSTRY'S "TOP BUYING" INFLUENCES

2 FULL ROWS OF BALLS...

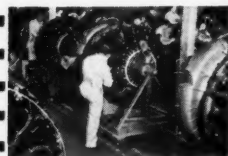


100 Series
Caster,
Large 36-
inch wheel
hardened
raceways,
hardened
balls.

SAVE 3 WAYS



PRODUCTION: Higher production costs demand new short cuts... from receiving to shipping platforms. Faultless Casters speed up the flow of materials.



MAN-HOURS: Cutting handling time, accounting for over 20% of industry's man-hours, provides your greatest opportunity for gains in worker productivity—unit output.

FLOORS: No need for costly floor alterations or floor covering—Faultless wheels are available for all types of floor surfaces and loads.

NOEHLTING

Faultless Casters are precision built with specialized machine-tools developed during half a century of caster-making experience—and are safeguarded with surplus strength at points of stress and wear. Our representative will gladly show you why, or write for literature.

Faultless

INDUSTRIAL CASTERS

FAULTLESS CASTER CORPORATION
EVANSVILLE 7, INDIANA

BRANCHES IN ATLANTA, BOSTON, CHICAGO, CLEVELAND, DALLAS, DETROIT, GRAND RAPIDS, HIGH POINT, HOUSTON, INDIANAPOLIS, LOS ANGELES, NEW YORK, ST. LOUIS.
Canadian Factory: Stratford, Ontario.

Circle No. 1 on Reader Service Card for more information



We Got **EXTRA MAN-HOURS** that

**STEPPED-UP
PRODUCTION 25%**

**without adding to payroll
or employee workload**



**Automatic Electric Trucks Actually
Released 2 out of 3 Men Engaged in
Hand-Handling Making Them Available
for More Productive Work**

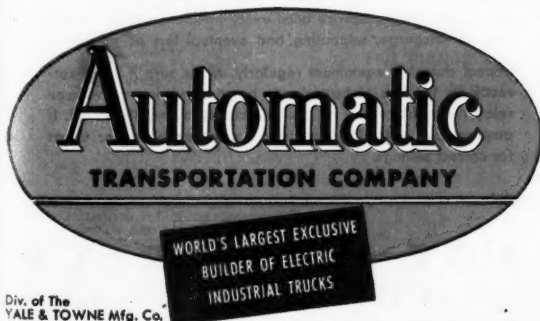
With unfilled orders piling up and stepped-up demand making things worse every day, we needed extra man power badly. The question was how to get it. Labor just wasn't available. It was at that time an ad in a trade journal caught my eye. It offered an 8 question check chart which I sent for. This amazing check chart showed me how to speed production and ship more goods faster with Automatic Electric Trucks.

Today with Automatic Electric Trucks, we have stepped up production 25% without adding another man or increasing our plant's production facilities. Bottlenecks have been eliminated, interdepartmental movement operations speeded up, and we got a bonus in warehouse space because Automatic Electric Trucks stack right up to the ceiling. What's more, in receiving and shipping alone we have cut our costs 50%, and throughout the plant have increased handling per man 30% to 35%.

On top of all this, my maintenance man tells me that our quiet, fume-free Automatic Electric Trucks cost less to operate and maintain . . . there's almost no costly time-out-of-service for repairs . . . and you should see how happy my truck operators are at the way these rugged trucks easily maneuver in narrow aisles and congested areas taking the work out of lifting, moving and stacking. Believe me, I know it's true that "Automatic puts more into their electric trucks so you get more out of them." No wonder I say they're indispensable.

If you need extra man-hours . . . if you want to realize savings of 50% to 75% on your material handling costs . . . speed production . . . ship more goods faster . . . take my advice, cut out the coupon below and mail it today. You'll get the 8 question check chart by return mail. It will prove to you, as it proved to me, that Automatic Electric Trucks will save you time, man-hours and money.

No One Makes Trucks Like Automatic . . . and No Truck Costs Less To Operate



AUTOMATIC TRANSPORTATION CO.

141 W. 87th St., Dept. P-1, Chicago 20, Ill.

Please send me your **FREE Money-Saver CHECK CHART** that reveals hidden handling costs and wasted man-hours . . . also **FREE** booklet: "How To Make Your Material Handling Pay Dividends."

Company.....

By.....

City.....Zone.....State.....

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GOULD

Plus-Performance

Plan

... SHOWS YOU HOW

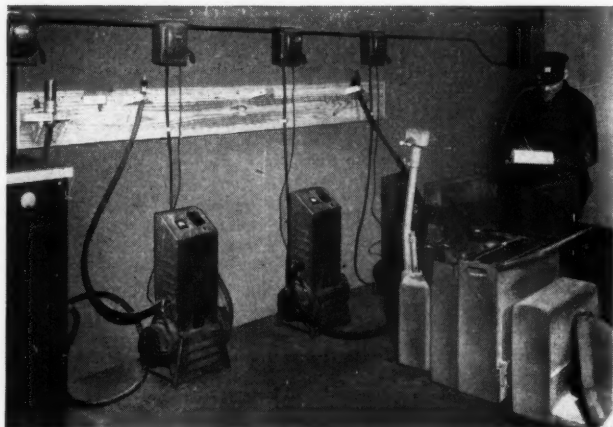
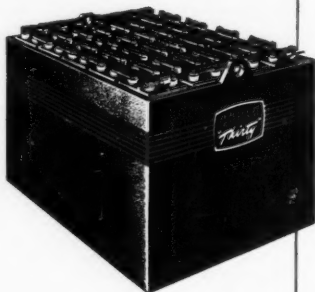
CORRECT CHARGING EXTENDS BATTERY PERFORMANCE!

Right now, the problem of conserving and extending essential battery power is urgent. Timely help is offered you by the **GOULD PLUS-PERFORMANCE PLAN** which can improve battery performance as much as 50%! Here is a complete system of manuals, articles, specifications, bulletins, record cards and charts which explains and illustrates how to select, charge and handle, maintain and determine the condition of your batteries.

The material comprising the **GOULD PLUS-PERFORMANCE PLAN** is available to battery users without obligation. A request on your letterhead will bring descriptive literature by return mail.



The Gould "Thirty"
with "Z" Plates—
America's Finest
Industrial Truck Battery



Charging rooms should be planned to make charging and handling convenient and economical.

FOUR SIMPLE CHARGING RULES SAVE POWER

1. Do not overcharge. Use 22.5 amperes per 100 ampere-hours of battery capacity for 80% of charging time. Finish charge at 5 amperes per 100 ampere-hours. Correct charging will not cause gassing or overheating.
2. Give periodic equalizing charges. An extra 4-hour charge at the recommended finish rate at least once a month but not more often than once a week makes sure all cells are up to full charge.
3. Keep idle batteries charged. Batteries not in use should be given a freshening charge once every three months to prevent internal discharge, sulphating and eventual loss of efficiency.
4. Inspect charging equipment regularly. Make sure it is set correctly for the size of batteries to be charged. Inspect voltage relay timers frequently to assure accurate automatic cut-off. If ampere-hour method is used, check ampere-hour meter charts for correct settings.

GOULD

STORAGE BATTERIES

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, NEW JERSEY

Always Use Gould-National Automobile and Truck Batteries

Circle No. 3 on Reader Service Card for more information

SEPTEMBER, 1951 • FLOW



VOL. 6, NO. 12

SEPTEMBER, 1951

FLOW is not the official publication of any group, society or other special interest: its editorial pages are unbiased and undominated.

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DETAILS OF THE ARTICLES IN THIS ISSUE . . .

The table of contents is on the cover this month.

Starting with our September issue, we have changed our Packaging Mechanics Section to include latest developments in shipping in addition to continuing articles on packaging. The section will henceforth be known as the Packaging and Shipping Section and will cover such topics as handling on shipping docks, carloading, blocking and bracing, what type of carriers are available for shipping *your* product and many others. To start off this series, we have devoted the whole section this month to an article "Are Your Shipping Efficiency." We urge you to read this illuminating report to measure the effectiveness of your own operations.

The Lincoln Electric Co., Cleveland, is getting ready to move into its new 8½ million dollar plant. President J. F. Lincoln invited FLOW'S president, Irving B. Hexter, to tour the strikingly modern structure. FLOW'S camera recorded this trip and you will find it in this issue. Lincoln's techniques are really worthwhile.

The B. F. Goodrich Co., Akron, found that by cleaning its floors, draw bar pull on platform trucks was reduced drastically. The information in this report by one of Goodrich's engineers should give you some ideas about the floors in your plant. Don't miss it.

"What The Handling Engineer Should Know" is the title of an article by John Immer, former professor at the University of Minnesota, and author of several outstanding books on material handling and related subjects. This is one of the most important stories FLOW has run in some time and we recommend it to all those responsible for material handling in their plant.

Other subjects covered in this issue include how to get the most from your lubrication program, completely mechanized warehousing, how to sell management on material handling, how to figure the package sizes for sheet metal spiral chutes, and many others.

FLOW is indexed regularly by Engineering Index, Inc.

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PRECISION METAL MOLDING
APPLIED HYDRAULICS
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OCCUPATIONAL HAZARDS
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"Acceptance under section 34.64. P. L. and R. authorized at Milwaukee, Wisconsin."

For Civilian or Defense Products

a low cost Collapsible Pallet Box

**Engineered to meet
your requirements**

check



Here's a money saver for in-plant storage and handling of materials and for outside shipments too. Its low initial cost will save thousands of dollars for plants using pallets in quantity.

check



The B-G Collapsible Wood Pallet Box is light in weight but built strongly enough to handle weights up to 5000 lbs. and is rugged enough to stand up under many repeated shipments.

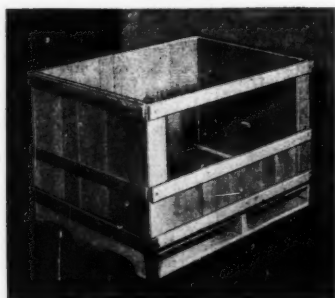
check



The collapsible feature is made possible by the exclusive Bigelow-Garvey TIGHT CORNER hinge design used on all of our collapsible wood shipping crates.

Used as a storage box, a tote box or as a shipping container, you will like this sturdy but inexpensive addition to effective materials handling.

MODEL B



always check



General Office and Laboratory

Write for complete details and prices to...

BIGELOW-GARVEY

lumber company

320 W. HURON STREET • CHICAGO 10, ILLINOIS

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MODEL A

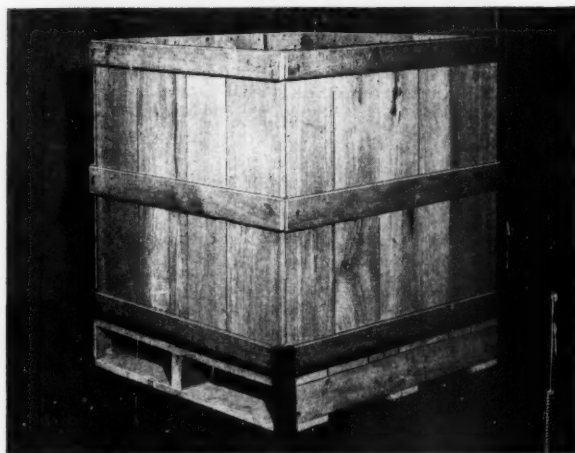


Photo shows how standard pallet box is easily attached to ANY standard pallet by means of 4 corner irons and a single steel strap, either flat or round.



Photo shows hinged box collapsed for storage or return shipment. Tops can be furnished if desired.

Photo shows front opening for easy access to contents when stacked one on top another or in racks. Furnished with or without self-locking insert panel.



Kraft
Crate



Tight Corner
Hinge Crate



Pallets



Pallet
Boxes

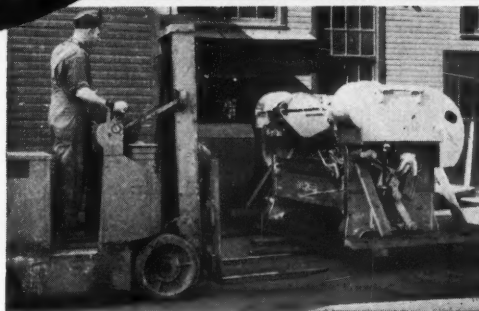
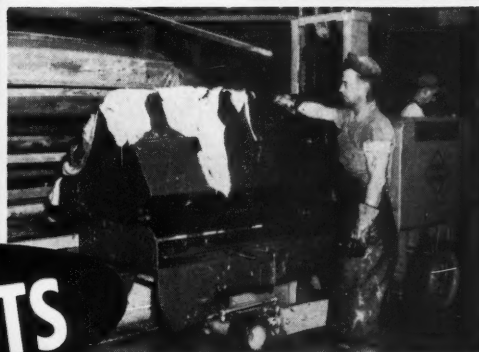


Wooden
Boxes



Six Section
Panel Crates

MILLS: ARKANSAS GEORGIA WISCONSIN MINNESOTA ILLINOIS



6 SPECIFIC BENEFITS

gained from these ELWELL-PARKER Trucks

Here are highlights from the success story of an E-P fleet at a prominent midwestern tannery:—

- 1 Elwell-Parkers have "enabled us to install a completely different and *advanced* method of handling hides . . ."
- 2 "Leather sure gets around in a hurry"—Elwell-Parkers help synchronize the flow of 3 million pounds of stock from one operation to the next in the processing cycle.
- 3 Heavy-duty Elwell-Parkers give dependable service—are "the greatest work horses of our tannery".
- 4 In storing pallets of hides, Elwell-Parkers can "plunk them right up to the ceiling".
- 5 Back injuries and sprains decreased sharply now that hides are no longer "manhandled" on wheelbarrows.
- 6 Trucks prove versatile in many maintenance operations, such as moving heavy machinery.

What make truck could work in the water and grease year in and year out like these Elwell-Parkers?

In over 300 *other* branches of industry, *bigger* unit loads are being moved *faster* and for *less* by Elwell-Parkers . . . *You, too, can benefit*—the first step is to have an experienced **MAN** analyze your material handling requirements. No obligation. Write The Elwell-Parker Electric Company, 4237 St. Clair Avenue, Cleveland 3, Ohio.



"INDUSTRIAL LOGISTICS"

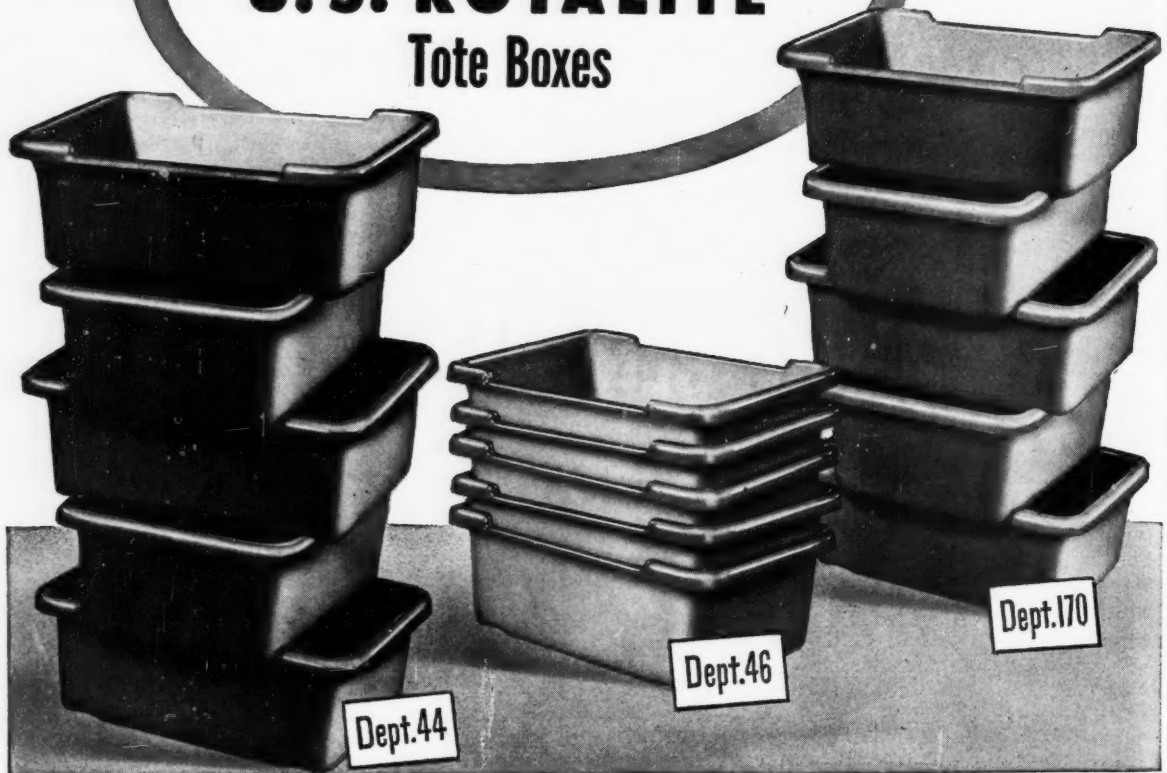
Send for this complete handbook on the science of materials handling. Please name your product.

ELWELL-PARKER

POWER INDUSTRIAL TRUCKS

Established 1893

How easy to segregate
Self-nesting, Self-stacking
U. S. ROYALITE
Tote Boxes



—available in “everlasting” colors for easy classification

Royalite Tote Boxes mean new economy, too. They replace other materials . . . do a better job. They're odorless and non-conductive. There's a Royalite Tote Box for every job. Choose from any of 18 ready-made sizes. Royalite means *the best* in tote boxes.

Only Royalite Tote Boxes have all these features

- | | |
|---|---|
| ★ Highly resistant to impact, non-splintering | ★ Not affected by oils, most acids, alkalis |
| ★ Lightweight | ★ Waterproof, stainproof |
| ★ Noiseless (no rattling or banging) | ★ Non-warping, non-corrosive |
| | ★ Available in different colors |



UNITED STATES RUBBER COMPANY

2638 North Pulaski Road • Chicago 39, Illinois

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SEPTEMBER, 1951 • FLOW



Exide-Ironclad BATTERIES

**ARE YOUR BEST
POWER BUY—
AT ANY PRICE**

They ASSURE high maneuverability of trucks . . . rapid, accurate handling of material. PROVIDE uniform rate of material handling with no unscheduled down time. SHOW lowest costs of operation, maintenance, repair, depreciation . . . inherently safe. Call in an Exide representative, and let him prove these facts.

**THE ELECTRIC STORAGE BATTERY COMPANY
Philadelphia 2**

Exide Batteries of Canada, Limited, Toronto

"Exide-Ironclad" Reg. Trade-mark U. S. Pat. Off.



**THE BEST
POWER BUY**

**Exide
IRONCLAD**

AT ANY PRICE

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EVERYTHING'S THE SAME

BUT THE NAME

NOW IT'S . . .

The **RAYMOND** *Corporation*



Under its former name, LYON-Raymond Corporation linked 80 years of successfully manufacturing quality products through three generations of the LYON family with 30 years of manufacturing material handling equipment under the RAYMOND family management.

Because the name LYON had no connection with present company management and caused confusion with similarly-named manufacturers, it was decided to shorten the name. It is expected that this new name — The RAYMOND Corporation — will better identify RAYMOND family management now and in the years to come.

The company in the past has built up a reputation for quality products and for pioneering in numerous types of **Hydraulic** Elevating Equipment. During the last several years, we have brought forth a notable number of "firsts".

Today, under our new name — The RAYMOND Corporation — we will continue to help keep materials moving — in factories, in warehouses, in every field where electric trucks and hydraulic elevating equipment can be applied. And, while our name is changed, RAYMOND policies, services and quality of products will continue on the high standards already established.



Formerly LYON-Raymond Corporation

The RAYMOND CORPORATION, Greene, N. Y.



ELECTRIC INDUSTRIAL TRUCKS • HYDRAULIC ELEVATING EQUIPMENT

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SEPTEMBER, 1951 • FLOW

**ADD
1/3 rd
MORE
SPACE
NOW**

TO YOUR EXISTING STORAGE FACILITIES

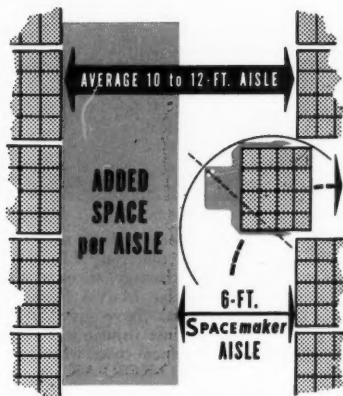
with the **RAYMOND** *SpaceMaker*

ELECTRIC TIERING TRUCK

How wide are the storage aisles in your plant or warehouse . . . 10 feet . . . 12 feet? If so, you're wasting up to one-half this width making room for conventional-type tiering trucks!

The new RAYMOND SpaceMaker does away with waste aisle space — increases your storage capacity by as much as 1/3. It's a rider-type tiering truck that actually right-angle tiers loads 130" high from aisles only 6-ft. wide. Just look at these SpaceMaker advantages:

- **STACKS FROM 6-FT. AISLES** Exclusive RAYMOND design eliminates counterweight, shortens overall length. Result: SpaceMaker tiers loads from 6-ft. aisles — permits one extra row of storage for each aisle now in use.
- **MANEUVERS LIKE MAGIC** Offset drive wheel produces 200° turning arc — enables SpaceMaker to maneuver in aisles narrower than its own length with load.
- **WEIGHS SO MUCH LESS** Compact construction plus no counterweight result in far lighter truck. Thus, SpaceMaker operates in low-capacity elevators, on lighter-capacity floors — has lower battery capacity requirements, costs less to run.
- **WRITE TODAY FOR BULLETIN 703** — It tells the complete SpaceMaker story. And ask for a SpaceMaker demonstration — you have to see it to believe it!



RELIEF FOR RUSH HOURS . . .

RAYMOND Hydraulic Pallet Lift Trucks speed up peak period handling, help out on short hauls — release the SpaceMaker for long hauls and tiering. Available in hand models or new rider-type electric-powered models. Send for bulletins No. 207 & 750.



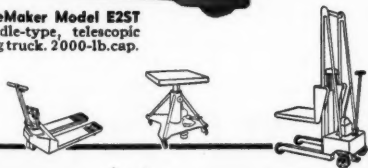
Electric Industrial Trucks • Hydraulic Elevating Equipment

The RAYMOND CORPORATION
Formerly LYON-Raymond Corporation
3349 SpaceMaker St., Greene, N.Y.

Gentlemen: Please send Bulletin 703 on your new SpaceMaker Electric Tiering Truck.

Name _____ Title _____
Company _____
Street _____
City _____ State _____

SpaceMaker Model E25T
Straddle-type, telescopic
tiering truck. 2000-lb. cap.

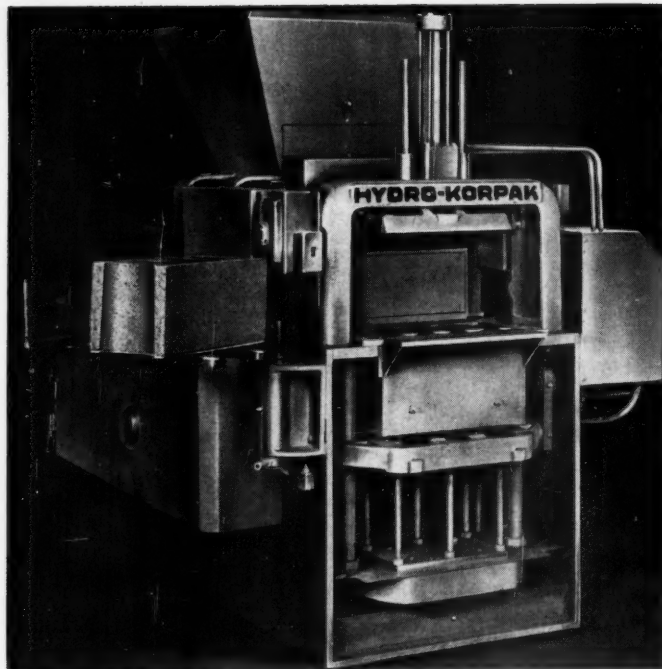


Circle No. 9 on Reader Service Card for more information

The Makers* of HYDRO-KORPAK say:

**"MARVEL
SYNCLINAL
FILTERS
are Standard
Equipment ... and
HAVE GIVEN
EVERY
SATISFACTION"**

*—W. E. Dunn Mfg., Holland, Mich.



HYDRO-KORPAK is a hydraulic pressure, masonry block making machine. Using sand, cement and cinder material, HYDRO-KORPAK'S hydraulic system must be well protected against damage through entrance of dust or larger particles of such highly abrasive materials. Marvel Synclinal filters, we are assured by the W. E. Dunn engineering department, "have given every satisfaction" in guarding these machines. Marvel protection against injurious foreign matter cuts maintenance costs while permitting the HYDRO-KORPAK to operate with all the productive efficiency built into it by the maker.

**FOR ALL
HYDRAULIC
EQUIPMENT**

In any field — under any conditions to which hydraulic equipment may be subjected — however severe — Marvel Synclinal filters are giving substantially longer periods of productive operation at a minimum loss of maintenance time.



SUMP TYPE (Cutaway)

LINE TYPE (Cutaway)

FACTS, NOT CLAIMS

Engineers decide on the basis of the record, on the basis of measurable facts rather than on claims of the "campaign promise" variety. Here is a fact with meaning:

**OVER 200* MANUFACTURERS
make MARVEL SYNCLINAL FILTERS
their O.E.M. Choice**

As of March 31, 1951

Marvel filters are available in sump and line models, in capacities from 5 to 50 g.p.m. (multiple installations effect greater capacities), and in wire mesh sizes from 30 to 200. Line models operate in any position and may be removed without disturbing pipe fittings. For efficient filtration of non-corrosive liquids in all HYDRAULIC and LOW PRESSURE systems investigate Marvel Synclinal Filters.

Write for Folder 105



Meets
J. I. C.
Standards

MARVEL ENGINEERING COMPANY
625 W. Jackson Blvd. Chicago 6, Ill.

Circle No. 10 on Reader Service Card for more information

LETTERS to the editors

To FLOW:

Would you kindly supply me with a tear sheet of your article concerning floor load capacities and their relation to powered rolling equipment. I would also be interested in obtaining information on how to calculate the width of an aisle required for pallet lift trucks, using a 45° or 60° pallet storage pattern.

E. D. Kunzler
Hudson Pulp & Paper Corp.

Tear sheets of our article, "Floor Load Capacities and Their Relation to Powered Rolling Equipment" have been sent to reader Kunzler. We have no exact information that would answer reader Kunzler's question on aisle width. Probably his best bet for that information would be the Industrial Truck Association.

To FLOW:

We have been requested to obtain an article on the short-wave radio in industry. It is believed that an article describing the Timken Roller Bearing Company's use of this equipment appeared in one of your 1949 issues. Since we have no indexes that cover this period, we would appreciate it if you would send us a copy of the paper or the issue in which it appeared. If you do not have any copies in supply perhaps you can identify the article so that we can get a photostat.

Geraldine Callahan
American Smelting & Refining Co.

A copy of the Timken story has been sent to reader Callahan, along with a raft of tear sheets that show



SPEED
LOADING OPERATIONS!
REDUCE
LOADING COSTS!

CUSTOM-DESIGNED to fit your exact loading requirements, Magliner dock boards are engineered to overcome any specialized loading conditions relative to your business.



FLARED DOCK BOARD—Specially designed to permit easy turning in a limited area.



BOARD AND RAMP COMBINATION—For use with truck docks where greater-than-normal truck-to-dock heights exist.

Magliner
MAGNESIUM
DOCK BOARDS

• FOR RAIL AND TRUCK DOCKS

Effect substantial labor savings in your shipping and receiving departments! Get the benefits of **smoother . . . faster . . .** more efficient loading by equipping your plant with Magliner magnesium dock boards. Magliner's heavy duty, bridge type construction assures adequate strength for the heaviest loads and equipment. Magliner dock boards are **magnesium-light . . .** they're easily handled and positioned by one man instead of three or four. Risk of accident and personnel injury is held to an absolute minimum! Loading equipment moves rapidly between car and dock, resulting in a smooth, uninterrupted flow of materials. Streamline your loading operations! Do a better job for less money! Write today for your free copy of Bulletin DB-204.

Magline Inc.

1st in Design and Construction—1st in Proven Service Performance

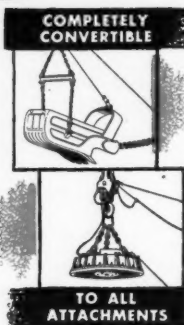
RAMP DOCK SAFETY SAFETY CAN SPECIAL

Circle No. 11 on Reader Service Card for more information



Built by modern precision methods, the UNIT 1520 leads the field in quality, and dependable performance. Designed for both "on and off" highway operation. So compact, it works efficiently even in small, cramped quarters, "in or out" of the yard.

- Rugged Construction
- Perfectly Balanced
- Hook Roller Construction
- Operated by ONE Man
- Powered by ONE Engine
- Hydraulic Steering
- Air Brakes and 4 Speed Air-Actuated Transmission
- Heavy Duty, yet operated with remarkable SPEED . . . SAFETY . . . ECONOMY!



UNIT 1520 can be equipped with retractable high A-Frame to permit capacity loads on extended boom at long radius.



UNIT CRANE & SHovel CORPORATION
6531 W. BURNHAM STREET • MILWAUKEE 14, WISCONSIN, U. S. A.



Circle No. 12 on Reader Service Card for more information

some of the more recent two-way radio stories FLOW has published. Since that first article on the Timken operation, we have presented a number of interesting feature stories that showed how industry is making good use of two-way radio as a handling aid.

To FLOW:

We are interested in buying a stationary lift on the order of, but not as large and for smaller weights than a lumber lift. Something like the type of lift you see come up from under sidewalks. Can you put us in touch with a manufacturer of this type of equipment.

E. A. Starker
Northwestern Cabinet Co.

We think the type of equipment reader Starker describes is the permanent lift variety. A list of some manufacturers who make this equipment has been sent to him.

To FLOW:

The February, 1951, issue of FLOW contained an article on the characteristics, applications and inspection of sling chains written by Mr. Norman J. Gebert, Products Manager, Sling Department, American Chain & Cable. It is desired to reproduce this article in the form of 8½ x 11 blueprints for use by our plant operating, maintenance and inspection organizations. Please advise if permission can be granted for us to reproduce this article.

E. H. Burtch
Western Electric Co.

Permission granted. One thing, though: if you intend to use the reproductions other than in your particular plant, we would appreciate your including a courtesy line. And if they are to be used outside of Western Electric, it will be necessary for you to receive permission for its use from author Gebert.



DODGE
SOLID STEEL CONVEYOR PULLEYS



So-o much Simpler!

DODGE
of Mishawaka, Ind.

CALL THE TRANSMISSIONEER, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Equipment" in your classified telephone directory.



- The pulley for *modern* belt conveyors;
- Drum type construction provides maximum strength with minimum weight.
- Interchangeable hubs simplify installation, positioning, removal — insure better conveyors at *less* cost.
- Accurately formed. Uniform rim thickness. Fully enclosed — to exclude dust, dirt, water.
- Diameters 6 in. to 8 ft., all face widths. Popular sizes stocked by our distributors.

DODGE MANUFACTURING CORPORATION
2300 Union Street, Mishawaka, Indiana

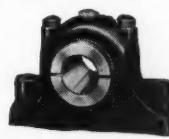
FIRST
IN POWER TRANSMISSION
MACHINERY!



V-BELTS AND TAPER-LOCK SHEAVES



TORQUE-ARM SPEED REDUCERS



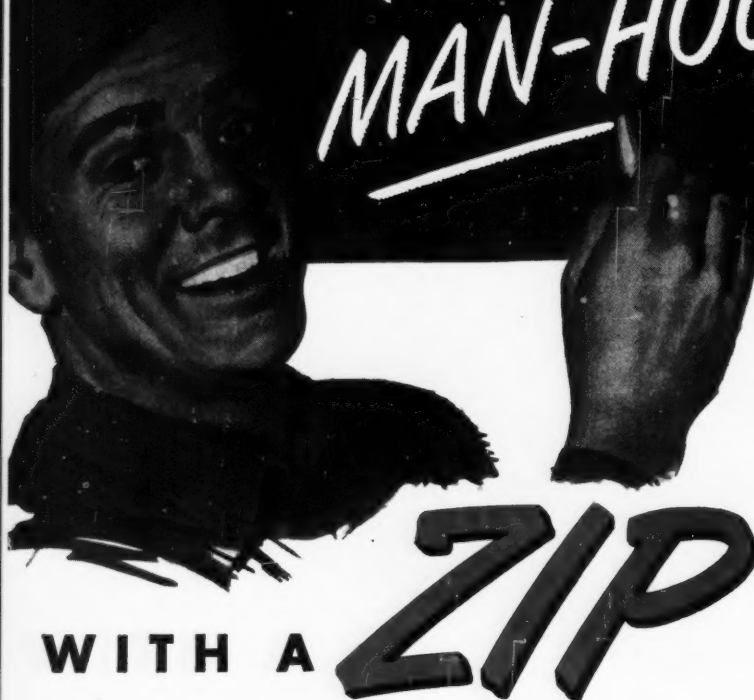
DODGE-TIMKEN PILLOW BLOCKS



ROLLING GRIP AND DIAMOND D CLUTCHES

FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY,
CHICAGO THRIFT-ETCHING CORPORATION, 1555 SHEPHERD AVENUE, CHICAGO, ILLINOIS
Circle No. 13 on Reader Service Card for more information

GET SET
TO SAVE
MAN-HOURS



WITH A

ZIP

HANDLE IT *"thru-the-air"!*

In thousands of plants the Zip-Lift is saving millions of hours — letting workers make the most of their time and skills — with the effortless speed of "thru-the-air" handling. Along production lines, beside machine tools, on shipping platforms — wherever loads are handled frequently — your workers can merely press buttons, and the Zip-Lift does the rest.

And remember — there's no substitute for Zip-Lift quality and reliability.

You pay so little more for ADDED VALUES like these:

SAFER Full magnetic control with current reduced to 110 volts at push button. Plugging crane type limit switch. Large double brakes. For *your* protection, P&H never stretches a motor rating.

LIFETIME CONSTRUCTION Precision-built — shaved gears run in oil — grease-sealed bearings — fully enclosed.

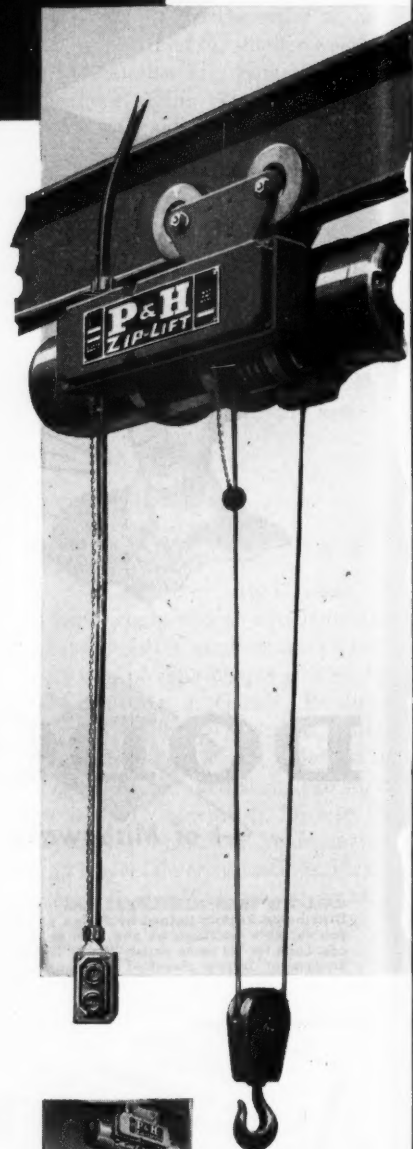


ELECTRIC HOISTS

4643 W. National Avenue
Milwaukee 14, Wisconsin

HARNISCHFEGER

CORPORATION



SEE YOUR ZIP-LIFT DEALER,
or write us for Bulletin H-
—it's filled with time-saving
ideas for you.

An Easy Index to This Month's Advertisers

Looking for a particular type of equipment? Listed below are the advertisers in this issue according to the type of product they manufacture. While each company is not listed under every product they make, we have attempted to make your job a little easier by listing them as often as possible.

Because of space limitations, we were forced to list some companies under the category "Specialized Equipment". Under this classification you will find such items as motors, hydraulic tail gates, powered barrows, line markers, etc. We suggest that for any equipment other than that listed under the main headings, you consult the advertisers under this category.

And for additional information on all types of material handling equipment, be sure to use the Reader Service Card for data found in the new product and free literature sections of this issue.

Batteries

C & D Batteries, Inc.	40
Thos. A. Edison, Inc.	68
Electric Storage Battery Co.	7
Gould National Batteries, Inc.	2

Belting, Belting Accessories

Cambridge Wire Cloth Co.	114
Flexible Steel Lacing Co.	116

Casters, Wheels, Tires

Bronco Rubber Co.	88
Colson Corp.	124
Darnell Corp.	123
Divine Bros. Co.	119
Faultless Caster Corp.	Inside Front Cover
Kilbourne-Jacobs Mfg. Co.	125
Lansing Co.	111
Market Forge Co.	89
Monarch Rubber Co.	21
Rapids-Standard Co.	80 & 126
U. S. Rubber Co.	6 & 70

Containers, Tote Boxes

Bigelow-Garvey Lbr. Co.	4
Convoys, Inc.	117
Charles Wm. Doepke Mfg. Co.	116
Ironbound Box & Lbr. Co.	79
L & H Wood Mfg. Co.	119
Midwest Wire Products Co., Inc.	81
Nassau Fibre Craft Co.	105
Tote Systems, Inc. (Bulk)	126
U. S. Rubber Co.	6, 70

Containers, Wire Collapsible

Pittsburgh Steel Products Co.	36
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Conveyors—Belt, Slat

Allied Steel & Conveyor Co.	76
Alvey Ferguson Co.	81
Baughman Mfg. Co.	108
E. W. Buschman Co.	71
Conveyor Specialty Co., Inc.	73
Lamson Corp.	69
Mathews Conveyor Co.	24
May-Fran Engineering Co.	110
Mechanical Handling Systems, Inc.	28
Metzgar Co.	116
Sam. Olson Mfg. Co.	118
Standard Conveyor Co.	77

Conveyors—Pneumatic

Grover Co.	66
Lamson Co.	69
Standard Conveyor Co.	77

Conveyors—Roller, Wheel

Alvey Ferguson Co.	81
Berlin Chapman Co.	109
E. W. Buschman Co.	71
Conveyor Specialty Co., Inc.	73
Food Machinery & Chemical Corp.	115
Lamson Corp.	69
Market Forge Co.	89
Mathews Conveyor Co.	24
Mechanical Handling Systems, Inc.	28
Metzgar Co.	116
Sam. Olson Mfg. Co.	118
Speedways Conveyors Co.	120
Standard Conveyor Co.	77
Wilkie Co.	78

Conveyors, Trolley, Flight

Allied Steel & Conveyors Co.	76
Alvey Ferguson Co.	81
E. W. Buschman Co.	71
Conveyor Specialty Co., Inc.	73
Hapman Conveyors Div.	111
Lamson Corp.	69
Mathews Conveyor Co.	24
Mechanical Handling Systems, Inc.	28
Sam. Olson Mfg. Co.	118

Conveyor Accessories

Arguto Oilless Bearing Co.	112
Flexible Steel Lacing Co.	116

Cranes—Bridge

Conco Engineering Works	80
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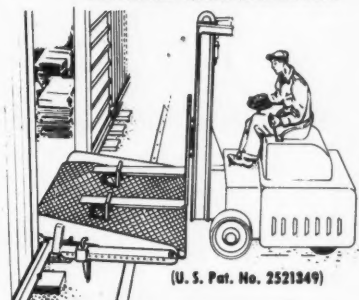
Cranes—Mobile, Truck

Baldwin-Lima-Hamilton Co.	67
Bucyrus-Erie Co.	30
Schild Bantam Co.	76
Silent Hoist & Crane Co.	117
Unit Crane & Shovel Co.	12

(Turn to page 75)

Elizabeth Iron Works

One Man "BRIDGE RAMP"

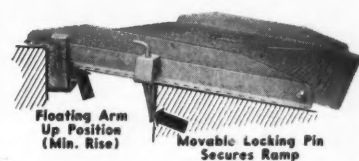


A NECESSARY Auxiliary to a Fork Lift Truck 15,000 lb. CAPACITY

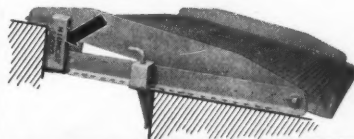
- ★ Rugged all-steel welded construction
- ★ Lift handles recess flush with riding surface
- ★ Curvature—for greater height differential
- ★ Shock plates at corners absorb impact
- ★ Stringers for safety and added rigidity

FLARE or RECTANGULAR
Sizes and types to span gaps from 5" to 58"
Rise 0" to 7" (+ or -).

NEW, IMPROVED Self-Levelling Locking Device and Floating Arm



Sleeve Permits Floating Arm to Rest Flat on
Lowest Level (Max. Rise) for 90° Angle
Bearing Against Platform



Other Elizabeth Iron Works Products
for Efficient Materials Handling . . .

STAR LIGHT-WEIGHT HAND TRUCK RAMP
2,000 lb. capacity

MASTER MEDIUM HAND TRUCK RAMP
4,000 lb. capacity

REFRIGERATOR CAR RAMP
15,000 lb. capacity

MULTI-STAK PALLET STACKER UNIT
4,000 lb. capacity

**ELIZABETH
IRON WORKS, Inc.**

Materials Handling Specialists
Steel Fabricators SINCE 1907

520 GREEN LANE, ELIZABETH, N. J.

Circle No. 15 on Reader Service Card

How to
**MOVE MORE
MATERIALS**
with less manpower, less equipment



—USE AN **ALLIS-CHALMERS HD-5G**
TRACTOR AND INTERCHANGEABLE ATTACHMENTS

You can not only move more materials with this versatile combination, handling them safer and cheaper — but at the same time free several men to do other jobs. *One man* works with an HD-5G Tractor and one or more interchangeable Tracto-Shovel attachments to lift, load and carry big quantities of bulk or solid materials — inside or outside plants.

No need of a special machine, either, to handle each type of work. Just choose the attachments you need from the 14 available — and you can match the HD-5G exactly to the jobs to be done. Attachments are easily changed by the operator in but a few minutes — by simply removing four pins. Get all the facts on this most versatile tractor-loader ever built. See your Allis-Chalmers dealer or write for new literature.

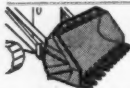
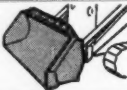
In addition to handling a wide variety of materials, the HD-5G maintains yards and roads, spots cars, plows snow, is busy all year 'round.

**Your choice of
14 Attachments—**
all easily interchanged
in a few minutes



LIFT FORK lifts, stacks or skids palletized loads, lumber, logs, pipe, etc. Lifting height (under fork) 106 in., capacity 4,000 lb.

STANDARD BUCKET feeds hoppers, stockpiles and reclaimers materials of all kinds, handles countless digging and loading jobs. (1-yd.)



ROCK BUCKET is built extra strong, with reinforced sides and bottom, for digging and loading rock, brick paving, etc. (1-yd.)

CRANE HOOK is for heavy-duty service—picks up and carries loads up to 5,000 lb. Loads and unloads freight cars, trucks. Lift height 138 in.

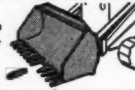


TINE FORK is ideal for loose, bulky materials such as metal shavings, pea vines, etc.



NARROW BUCKET has 3/4-yd. capacity, is narrow and deep for working in tight places.

BUCKET TEETH attached to any bucket increase production as much as 30%.

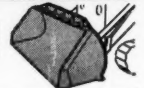


ROCK FORK lifts heavy boulders, concrete blocks—screens out larger pieces from any aggregate.

ANGLED OZER may be tipped, tilted, angled right or left.

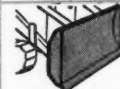


LIGHT MATERIALS BUCKET, big 2-yd. size, speeds loading and carrying of light materials such as snow, coke, coal, cinders.



DRAG BUCKET is excellent for jobs such as unloading from ship hold—drags material from sides and corners into reach of clamshells.

SNOWPLOW knives through heavy drifts, cleaning 116-in. path to keep plant drives open, traffic moving.



BULLDOZER BLADE clears and levels land, grades roads, backfills, maintains dumps, handles any 'dozing job.

TRENCH HOE digs flat-bottomed ditch 27 in. wide, depths to 8 ft. Special buckets available to meet job requirements.



HD-5G weight with standard bucket,
16,200 lb. — 40.15 drawbar hp.

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

MEN in the news



E. M. Barber
Pittsburgh Steel



J. A. Baldinger
Automatic
Transportation

... at Automatic

John A. Baldinger, Assistant General Manager of the Philadelphia Division, returned to Chicago recently to become General Manager of Automatic Transportation Company. Baldinger started with Yale & Towne Mfg. Co., of which the Philadelphia Division and the Automatic Division are component parts, in 1945 as Assistant Sales Manager of the Automatic Division.

... at Pittsburgh Steel

E. Milton Barber will become Executive Vice-President and Director of the Company. Barber has been President of Thomas Steel Company, Warren, Ohio, since 1945. Thomas assets were taken over by Pittsburgh Steel this spring.

... at Allis-Chalmers

William C. Johnson, executive vice president, died recently following a heart attack. He was 50. Johnson was also a member of the firm's board of directors and a member of the executive committee of the board. He started at Allis-Chalmers in 1924 as a ma-

Turn to page 24

"Lost time is never found again."

—Ben Franklin's Almanac, 1757



When ye important tool lies idle a day for want of a part or a drop of oil, that day's customers are disappointed men.

—Acme Steel Notebook, 1951

How are your newer employees coming along? Do they realize how important time is to your business? Do they get all the results they should out of their machines? Do they know how to keep machines running as well and as steadily as they were built to run?



For example, take any place in your plant where skill and knowledge pay off in greater thrift and increased efficiency. Let's start with your shipping department. Here are

five things everybody ought to know to keep Acme Steel Strapping Tools on the job:

1. Clean and oil every week.
2. Check and clean gripping dogs weekly. Replace when teeth are worn.
3. Detect worn punches and jaws early by checking sealed joints regularly. If in doubt, submit samples, identified by model and serial number, to Customer Service Department, Acme Steel Company.
4. Keep parts list and supply of spare parts handy to make minor repairs. Additional parts lists supplied upon request.
5. Ask about the Acme Steel "3-WAY SERVICE PLAN" for equipment repairs.

Follow these suggestions. And ask your Acme Steel representative to work with you on ways to increase efficiency, eliminate waste and stretch the available supply of Steel-strap. Or write Dept. F-91.

ACME STEEL COMPANY, 2840 Archer Ave., Chicago 8



Spread out across the U.S. and Canada are 41 strategically located Acme Steel service offices. See your telephone directory or write us for the one nearest you.

Steel Strapping — Stitching Machines & Wire
Venetian Blind Slat Stock — Corrugated Fasteners — Strip Steel
Circle No. 17 on Reader Service Card for more information

ACME STEEL CO. CHICAGO

Muscle FOR MOUNTAIN M



The famous big yellow machines built by Caterpillar Tractor Co. are accepted as the last word in efficient earth moving machinery the world over. The reason—Caterpillar designs and builds ruggedly but thoroughly—quality is their "watchword." Caterpillar knows the importance of efficient materials handling equipment required to produce quality "Cats" at competitive prices. Their modern plant at Peoria, Illinois, is a thorough institution of material handling efficiency. The Powell Pressed Steel Co. is happy to have had a hand in establishing the enviable reputation Caterpillar has attained for product and service throughout

the world. Thousands of sturdy Powell boxes are continually at work handling the many and various Caterpillar parts safely and efficiently through production operations and at minimum costs. The record tells the story. Regardless of usage, stored outside or inside, stacked four or five high, handled with lift truck or crane, holding large parts or small—durable Powell equipment has constantly delivered the goods with maximum efficiency.

Modernize by specifying Powell All-Steel Equipment

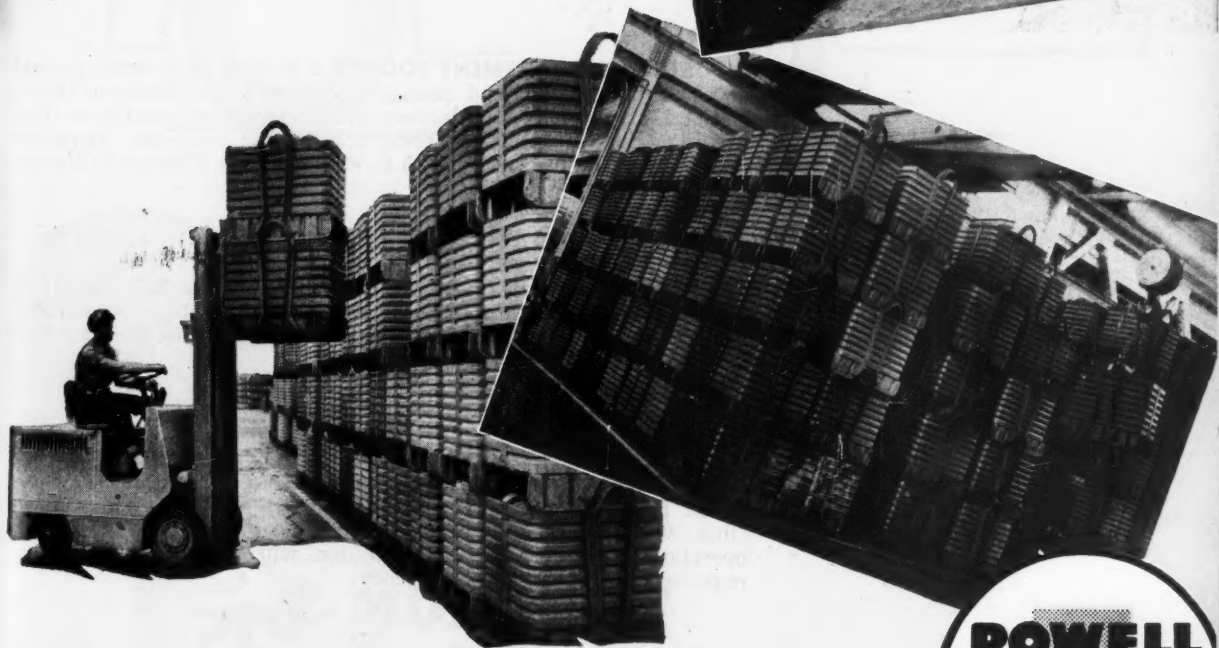
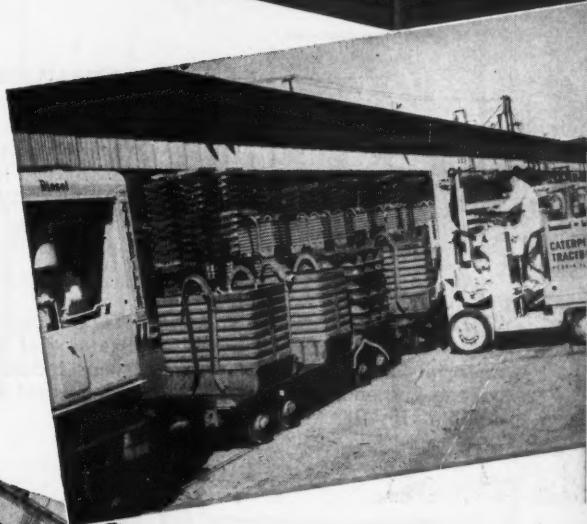
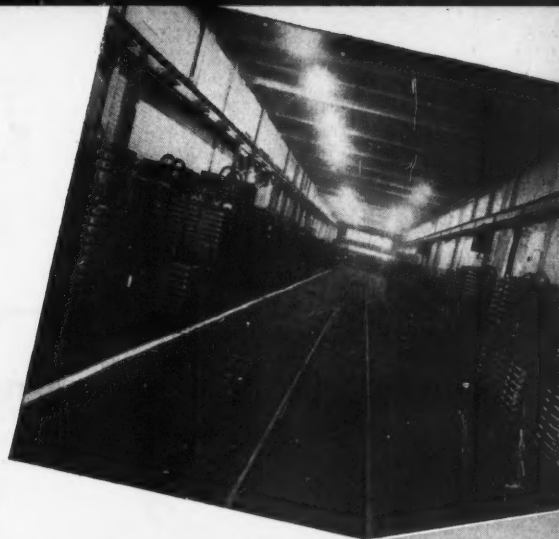
Because of the present critical material situation—due to the national defense effort—Powell deliveries are expedited if you can furnish steel. A government D. O. number is essential.

THE POWELL PRESSED STEEL CO.

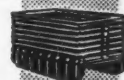
ORIGINATORS OF COLD FORMED ALL-STEEL
IN GREATER VOLUMES

IN MOVERS...

Like Rugged
"CATERPILLAR" Machines
POWELL
All-Steel HANDLING CONTAINERS
take the tough jobs in stride



POWELL
PRESSED STEEL



SINCE 1920

CCANY • HUBBARD, OHIO

ALL HANDLING EQUIPMENT
YOUNG

NEWS VIEWS TRENDS

THE SOCIETY OF PACKAGING AND MATERIAL HANDLING ENGINEERS has just announced another National Protective Packaging and Materials Handling Competition. Judging will be done at the show in Cleveland, Ohio, October 2-3-4. There are seven different groupings for this contest. Rules and regulations may be obtained from SIPMHE headquarters, 20 W. Jackson Blvd. Chicago 4, Illinois.

CEMA'S GENERAL INDUSTRIAL DIVISION told NPA recently that the industry is having trouble placing orders for steel against advance fourth-quarter CMP allotments. This may reduce production of conveyor equipment, the Division members said. They asked for NPA assistance in obtaining steel, and asked that the industry be allowed a larger inventory of steel than permitted by NPA Order M-1.

"TOP PERFORMANCE", A YALE & TOWNE educational film with a circus motif is now ready for bookings. It is a 22 minute film showing applications of industrial trucks and hoists. Designed for showing before material handling groups, engineers, and industrial groups, it will have extra appeal to students and other college audiences. Previews may be obtained from Yale & Towne Mfg. Co., 11000 Roosevelt Blvd., Philadelphia, 15, Pa.

INDUSTRIAL MANAGEMENT SOCIETY is holding its fifteenth annual time and motion study and management clinic at the Sheraton Hotel, Nov. 1 & 2. Top industrial leaders will discuss developments in time study, motion economy, methods, and human relations. Inquiries should be sent to the society at 35 E. Wacker Drive, Chicago 1, Illinois.

ADDITIONAL CONVEYOR BELTING will be available now that the new 5 million dollar B. F. Goodrich belting plant is in operation in Akron, O. Belting in single rolls up to 35 tons in weight—or as large as existing rail and truck facilities can handle—can now be produced. It has a 664,000 pound press for vulcanizing belts and many other new features for the handling of belting.

ANOTHER PLANT ADDITION is being announced, this time by Republic Rubber Division, Lee Rubber & Tire Corp. of Youngstown, Ohio. Construction will begin immediately and it hopes to be in operation in 12 months. The addition will be used for military requirements during the emergency.

NASSAU FIBER-CRAFT COMPANY'S plant in Oyster Bay, New York, was completely destroyed by fire last month. Company officials have announced that plans are being made for immediate reconstruction of the company's facilities.

Mono-Cushions
cut the cost of bumps



REDUCE LOAD BREAKAGE—Big burly Mono-Cushions soak up shock without sacrificing stability, save plenty of money in moving fragile loads.

REDUCE MAINTENANCE—Mono-Cushions soak up so much shock and shock load that they reduce maintenance on bearings, steering linkages and driving trains as much as 40%.

REDUCE FLOOR WEAR—Easy-going Mono-Cushions protect floors from the pounding of heavily laden trucks, cut floor maintenance costs.

THE MANUFACTURER OF YOUR VEHICLES can supply you, through his service branches, with the type of Monarch Tire engineered for your equipment.

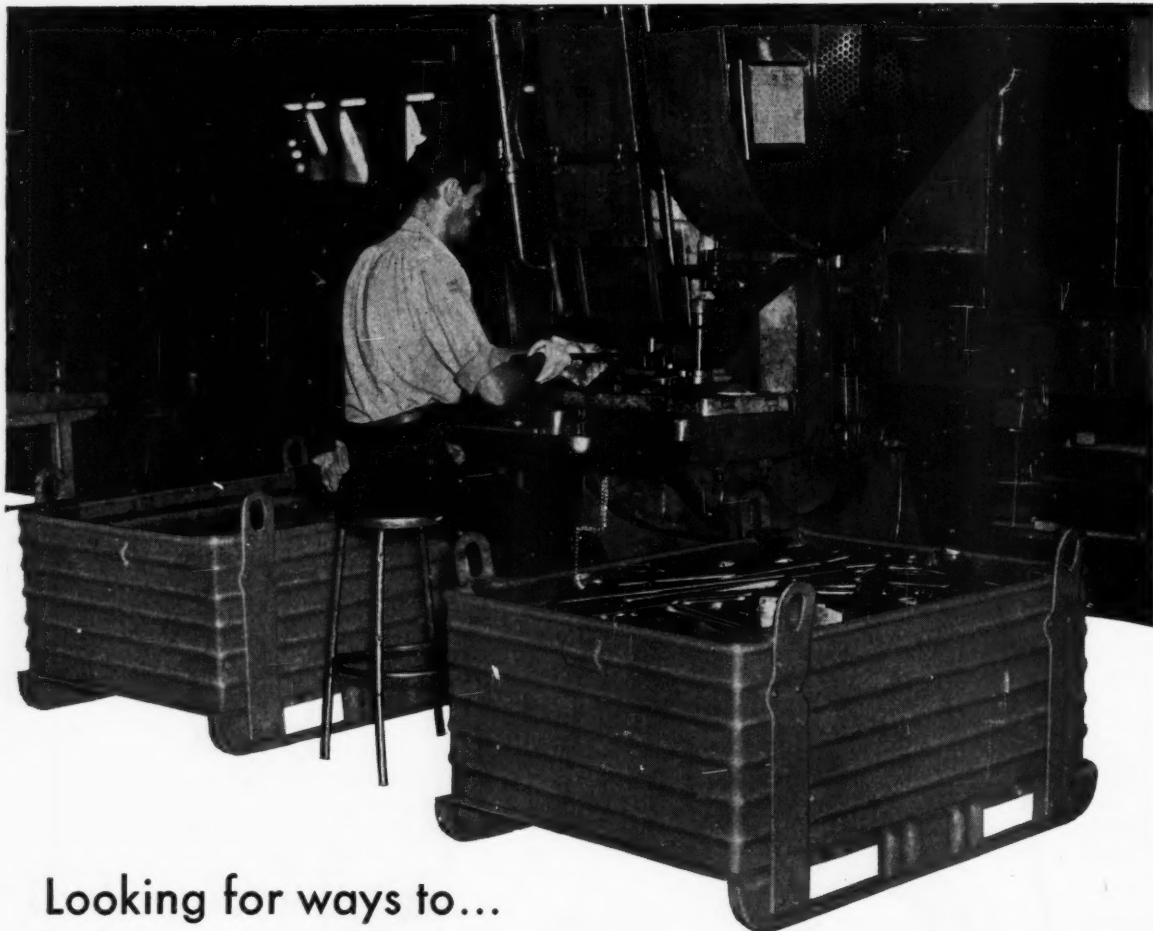


**THE
MONARCH
RUBBER COMPANY**

501 LINCOLN PARK • HARTVILLE, OHIO

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

Circle No. 19 on Reader Service Card for more information



Looking for ways to...

SIMPLIFY HANDLING AND SPEED PRODUCTION?

... Then you'll want to check on the latest advances engineered in Union Metal steel boxes, skids, pallets and combinations. For these modern units introduce new short-cuts, new *ideas* to help you speed production and cut your handling costs.

Pictured here in multi-purpose service is one of the many Union Metal skid-box types. Note the versatility—provision for 4-way pickup with fork trucks . . . sturdy lugs for crane handling . . . tiering seats for compact, stable stacking to make the most of storage space . . . plus over-all ruggedness you just can't beat!

Remember, there's Union Metal skid-box-pallet equipment for the speediest, most efficient handling of virtually any material under any condition. Write for Catalog 77. It's full of helpful ideas. The Union Metal Manufacturing Company, Canton 5, Ohio.



UNION METAL
Materials Handling Equipment

Circle No. 20 on Reader Service Card for more information

SEPTEMBER, 1951 • FLOW

**3-WAY
SAVINGS
WITH...**

REVOLVATOR RED GIANT LIFTRUCK and skid platforms

Double Stroke RED GIANT LIFTRUCK

This powerful hydraulic LIFTRUCK is easy to pull, easy to push. Two stroke handle pumping is simple . . . quick . . . takes little effort. Lifts 2500 to 5000 lb. within an arc of over 75°. Has shock absorber release check for smoothness and long life. Dependable for severe continuous service.

YOU MAKE a triple savings with this Revolvator materials handling "package." Powerful Red Giant Liftruck and steel-bound skid platforms (1) save manhours by speeding production in your plant; (2) lower maintenance because their scientific design has fewer working parts; (3) save dollars because skid platforms cost less when purchased with LIFTRUCK.

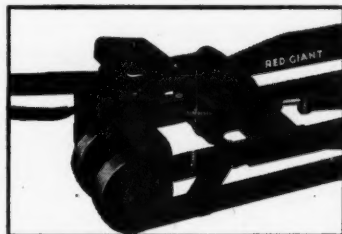
You can count on this Revolvator equipment to keep giving low-cost service for years. Write for Bulletins 170 and 174 for complete information.



Steel Bound SKID PLATFORMS

Superior strength insures long wear under rough handling. Platforms of hard wood, steel-bound, bolted and with legs of heavy bar steel. Fully bolted construction permits easy replacement of boards. Conventional type shown here made in many weights and sizes. Other types available.

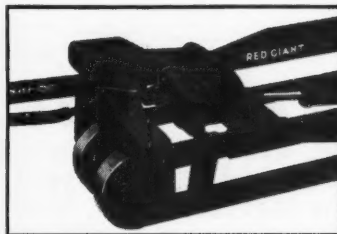
How Red Giant Double Stroke System Works:



1st stroke completed. Load halfway up.



Ready for 2nd stroke.



2nd stroke completed. Load fully lifted.

REVOLVATOR COMPANY

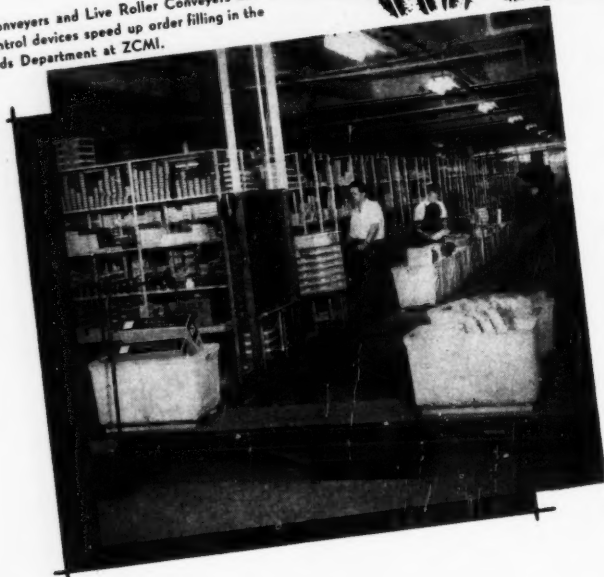
8739 TONNELE AVENUE, NORTH BERGEN, NEW JERSEY

Circle No. 21 on Reader Service Card for more information

RE-108

"helping ZCMI serve the mountain west"

Belt Conveyors and Live Roller Conveyers with traffic control devices speed up order filling in the Dry Goods Department at ZCMI.



● On June 12, ZCMI (Zion's Cooperative Mercantile Institution) formally opened its magnificent new wholesale warehouse in Salt Lake City. With this giant enterprise came a new concept of wholesale distribution for the Mountain West.

Like all such great projects which are successful, it is the result of many people, who know their respective businesses well, working together. Cooperative planning, we call it.

Working closely with the people at ZCMI, Mathews Engineers developed the conveyor system which is vital in providing the incredibly fast, efficient service which is now available to ZCMI customers. Truck towing Trolley Conveyers, Belt Conveyers and Live Roller Conveyers are combined in a system which makes order filling in all departments an easy task, when otherwise it would be a complex problem indeed.

In jobs like this—the show jobs of the conveyor business—there is no substitute for experience. That's why we can say, "if it's Mathews Equipment, it has to be right."



MATHEWS CONVEYERS

GENERAL OFFICES Mathews Conveyor Company
ELLWOOD CITY, PENNSYLVANIA

PACIFIC COAST DIVISION . . Mathews Conveyor Company West Coast
SAN CARLOS, CALIFORNIA

CANADIAN DIVISION Mathews Conveyor Company, Ltd.
PORT HOPE, ONTARIO

Men In The News

Continued from page 17

chinist helper. He was elected executive vice president in February of this year.

. . . at Moto-Truc Co.

Eugene L. Beisel passed away July 12th. Beisel was one of the early pioneers in the truck field. His absence will be felt in many quarters.

. . . at A. B. Farquhar Co.

W. D. Goad is now sales manager for the conveyor division. He has been with Farquhar since 1936. Also joining him in this division is C. W. King, formerly sales correspondent and now assistant sales manager. R. F. Tomlinson has been appointed general sales manager for all divisions of the company.

. . . at Mechanical Handling Systems

John D. Gordon has been named general sales manager. He was formerly vice president of the Progressive Welder Co. of Detroit and was a past director of the American Welding Society.

. . . at Brainard Steel Co.

Frank J. Byrne is the new assistant manager of sales for the steel strapping division of the company. He was formerly a sales representative in the Cleveland district.

. . . at Hyster

Paul M. Fischer is chief methods engineer in the Portland, Ore. plant. He was formerly Peoria factory manager. W. H. "Bert" Neptun is the new factory manager succeeding Fischer.

. . . at Gifford-Wood Co.

William E. Herb, vice president
Turn to page 89

Buy the right HYSTER® 20 to fit your particular job

6 variations of one basic model...select the one that best suits your needs

What lifting and transporting capacity do you require from a lift truck? In the HYSTER 20 you can have a model with—

- 1) **2000 lbs.** capacity at 15" load centers (Standard Hyster 20)
- 2) **2000 lbs.** capacity at 24" load centers (Optional additional counterweight added to Standard 20)
- 3) **1300 lbs.** capacity at 15" load centers (Skeleton counterweight)
- 4) **1000 lbs.** capacity at 24" load centers (Skeleton counterweight)
- 5) **2000 lbs.** capacity at 15" load centers (Skeleton counterweight plus optional additional counterweight)
- 6) **1500 lbs.** capacity at 24" load centers (Skeleton counterweight plus optional additional counterweight)

Where the transporting of 2000 lbs. on 24" load centers is a prime requirement, the installation of the additional optional counterweight to the standard 20 model achieves the necessary result.

The Hyster 20 with skeleton counterweight is of great importance where floor load limits exist; where elevator lifting capacities are materials handling factors; and where a high percentage of the loads are in the 1000 lb. range.

By quickly installing the additional optional counterweight to this same Hyster 20 with skeleton counterweight, lifting capacities are increased from 1300 lbs. to 2000 lbs. at 15" load centers; and increased from 1000 lbs. to 1500 lbs. at 24" load centers. This gives the owner a 2 in 1 lift truck combination.



The right Hyster 20 lift truck, with the right attachments, tools and accessories, becomes the greatest cost cutting machine in the entire field of materials handling equipment.

Why carry around extra weight?

The Hyster 20 for 1300 lbs. at 15" load centers or 1000 lbs. at 24" load centers has a skeleton counterweight that reduces the weight of the standard Model 20 by 600 lbs. This light weight but heavy duty fork lift truck will cut maintenance and operating costs; yet it will provide the maximum lifting and transporting capacities required in a great many industries.

The additional optional counterweights can be installed in less than 30 minutes; removed in much less time.

See your Hyster dealer for further information.

HYSTER COMPANY

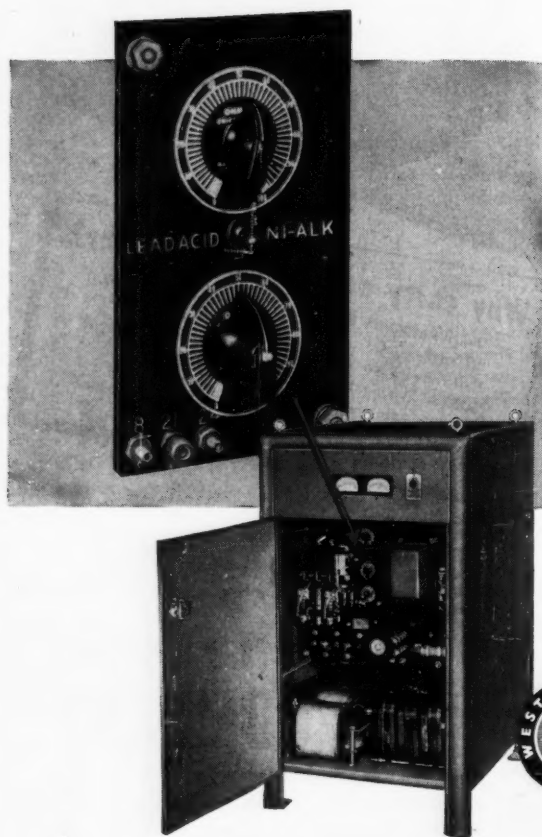
THREE FACTORIES

2931 N. E. CLACKAMAS ST. . . . PORTLAND 8, OREGON
1831 NORTH ADAMS STREET . . . PEORIA 1, ILLINOIS
1031 MEYERS STREET DANVILLE, ILLINOIS



Circle No. 23 on Reader Service Card for more information

"Rectox SIMPLE DIAL OPERATION is for me!"



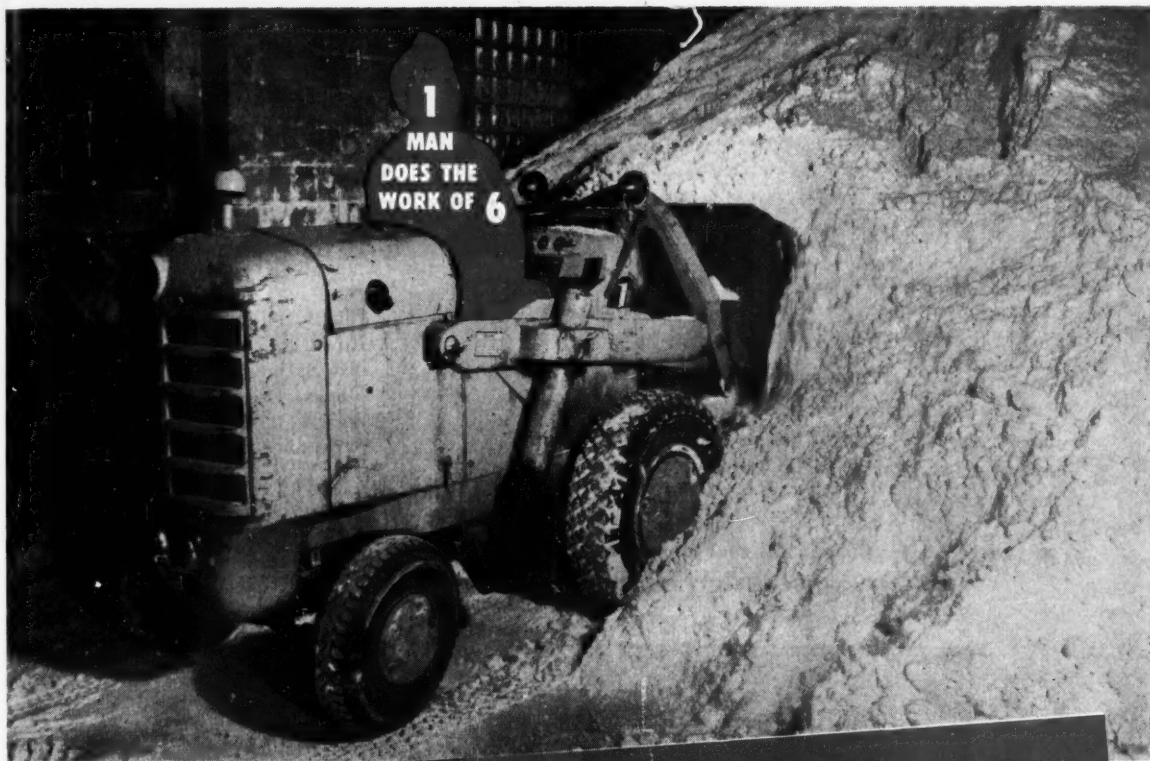
Just set the dials for the starting and finish rate. No transformer or reactor taps to change for current adjustment. It is completely automatic . . . fool-proof. Anyone can operate it. Just plug it in and forget it. What's more:

- ★ One unit serves 80% of your battery charging requirements.
- ★ No energy wasting resistor . . . no moving parts.
- ★ Combination units charge lead-acid or nickel-alkaline-type batteries.

MORE DATA? Ask your Westinghouse Representative for a copy of DB-19-040 or write Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pennsylvania.

J-21619





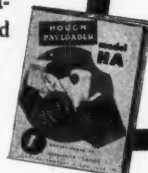
PAYLOADERS can Help You Too

EVERY industry with loose or bulk materials to handle is buying Hough PAYLOADERS because these husky, unit-design tractor-shovels are a sure, proven way to lick rising costs, solve manpower shortages and increase output.

A PAYLOADER more than pays its way every day — actually pays for itself within a few months doing the many jobs listed here and doing them faster and cheaper . . . releasing manpower for more productive work.

The 12 cubic foot Model HA shown is the smallest of the PAYLOADER line that includes graduated sizes up to 1½ cubic yard bucket capacity. Every PAYLOADER is a complete, Hough-built tractor-shovel specifically designed with multiple reverse speeds and other features that insure fast, low-cost bulk material handling. They are backed by 30 years of material-handling equipment manufacture and are sold and serviced by a world-wide Distributor organization. The Frank G. Hough Co., 731 Sunnyside Ave., Libertyville, Ill.

Literature on any size PAYLOADER will gladly be sent without obligation.



On These Jobs

- Unload box cars
- Dig and carry all kinds of bulk and loose materials
- Feed conveyors, hoppers, elevators, baggers
- Unload trucks
- Load box cars
- Carry bagged and baled materials
- Clean up aisles, gangways
- Maintain private roadways
- Handle coal, coke, ashes
- Stockpile coal and materials
- Remove snow
- Lift-pull-push



PAYLOADER®

THE FRANK G. HOUGH CO. • Since 1920



Circle No. 25 on Reader Service Card for more information

A Packaged Conveyor

you can erect yourself

Here is a complete overhead, power driven, monorail conveyor for light and medium loads—the MHS Junior Monoveyor.

You make your own layout to meet whatever manufacturing, transportation and storage requirements you have. Order the necessary components and erect it yourself. No lost time—no unnecessary expense.

Write for Bulletin JM-1 for complete details on components and layout.



**Mechanical
Handling**
Systems, Inc.

4620 NANCY AVE. • DETROIT 12, MICH.

Offices in Principal Cities



Circle No. 26 on Reader Service Card for more information

LITERATURE featured in ads

Illustrated bulletin offered by Rowe Methods, Inc., shows typical installations of Rowe Adjust-A-Docks, tells how you might cut dock handling time 67% with the hydraulic dock boards.

Circle No. 63 on Reader Service Card

You stand to save two-thirds of your valuable floor space with the A-B-C Short Case Sealer in your packaging department. New literature from A-B-C Packaging Machine Corporation shows how.

Circle No. 82 on Reader Service Card

Parker Sweeper Company's fact file shows how other people have saved as much as 75% over hand sweeping costs by using a Parker powered floor sweeper.

Circle No. 126 on Reader Service Card

Bulletin SL-25 from Cullen-Friedt Company gives you the complete story of C-L Lifter advantages.

Circle No. 51 on Reader Service Card

The Krane-Kar is a swing-boom mobile crane that handles loads at its side as well as its front. A natural for cramped quarters. Bulletin 79 from Silent Hoist & Crane Company shows what the Krane-Kar can do.

Circle No. 111 on Reader Service Card

SEPTEMBER, 1951 • FLOW

SQUEEZE PLAYS... *that save you money!*

SAVE SPACE!

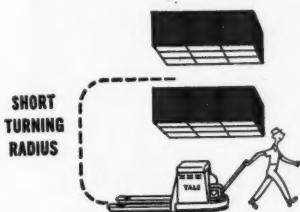
Thousands of square feet of it in aisles alone! Yale's Worksaver needs less room to work in so you gain valuable extra space for storage and production.*



*Consider this saving before building new facilities.

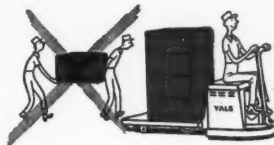
SAVE TIME!

You can quickly work heavy loads with this shorter, lighter, more maneuverable Worksaver, cut costs on jobs bigger trucks can't get at.



SAVE MANPOWER!

One man at the steering handle can free an entire gang from the "sweat, strain and sprain" of heavy hand lifting.



"WALK IT OR RIDE IT!"

Eliminate waste on hard-to-get-at jobs with these YALE WORKSAVERS

SAVE SAVE SAVE—that's the story of YALE'S Stubby Worksaver!

These pallet or platform trucks squeeze into small spaces to do big moving and lifting jobs... open up whole new areas of your plant to faster, more efficient materials handling... *cut your time and labor costs as much as 75%!*

The Yale Worksaver is a rugged trouble-free truck, too! A powerful electric drive unit, hydraulic lift and welded steel frame keep it on the job for years with a minimum of servicing.

Here's another YALE "expert" at cutting your costs

YALE EASY-LIFT HAND TRUCK



... Use it for short hauls, or in combination with Yale power trucks. YALE Easy-Lift makes it a cinch to lift and move heavy loads. It's light, maneuverable, sturdily constructed.

Send this coupon today!

THE YALE & TOWNE MANUFACTURING CO., Dept. 49
Roosevelt Boulevard & Haldeman Avenue, Philadelphia 15, Pa.

I am interested in cutting my materials handling costs.

Please send me free "Worksaver" literature.

Please send me free literature on Hand Trucks.

Name _____

Company _____

Street _____

City _____

State _____

YALE & TOWNE

The Yale & Towne Manufacturing Co., Philadelphia 15, Pa.

In Canada write The Yale & Towne Mfg. Co., St. Catharines, Ontario.

YALE is the registered trademark of The Yale & Towne Manufacturing Co.

Circle No. 27 on Reader Service Card for more information

FLOW • SEPTEMBER, 1951

Here's Pin Point Crane Control



Hydrocrane Spots Loads Within Fraction of Inch

Here's why plants, warehouses and yard users find the Hydrocrane in a class by itself. This fully hydraulic truck crane has a combination of features no other unit can match.

Telescoping Boom reaches in and out of windows and doors, box cars, between beams, rafters, and stacks of boxes, bales, etc. — without moving crane an inch. Great for close quarter work in factories, warehouses, etc. with low head room and limited space for maneuvering.

Precision Control. With every crane function fully hydraulic, operator can meter power flow as smoothly and easily as metering flow of water through a faucet. Outriggers set hydraulically in seconds — provide a solid base. No twisting, wracking strains on truck frames — no bouncing on springs and tires.

Simple Operation. Hand levers only — no tricky hand-foot coordination. No brakes or clutches to grab and slip. "Deadman Control" means safety for work crews. If operator lets go, all levers return to neutral — load stops dead.

Two sizes — $\frac{1}{4}$ -yd. 2-ton, $\frac{3}{8}$ -yd. 3-ton. Attachments include clamshell, crane hook, 1-yd. material handling bucket, grapples, magnet and dragshovel front end.



Bucyrus-Erie Hydrocrane Division South Milwaukee, Wisconsin

Gentlemen: ☐ Please send Hydrocrane literature.
☐ I want a Hydrocrane demonstration.

Name.....

Company.....

Address.....

State..... City.....

122H51

Circle No. 28 on Reader Service Card for more information

Lift and dump mechanically, and you'll save time and trouble. That's the advice Colson Equipment & Supply Company gives you in a colorful new catalog that shows off latest Colson dumpers.

Circle No. 57 on Reader Service Card

New literature offered by The Nolan Company shows how the Model-H 1-man car door opener works to save smashed fingers and speed up shipping jobs.

Circle No. 94 on Reader Service Card

Magcoa dockboards are made of magnesium, can be handled easily by one man. A new folder from Magnesium Company of America tells all about them.

Circle No. 128 on Reader Service Card

Catalog F. from Alexander Sill Company gives you the lowdown on its elevator sills. You use the sills to speed handling, cut trucking hazards and stop damage losses. The catalog shows how.

Circle No. 137 on Reader Service Card

Cushman & Denison Mfg. Company thinks it has a better way to mark parts in its new Flo-Master Fountainbrush. A brand-new brochure tells why.

Circle No. 85 on Reader Service Card

SEPTEMBER, 1951 • FLOW

The new Unit 1520 self-propelled crane is a 20-ton capacity model made by Unit Crane & Shovel Corporation. It's designed for both "on and off" highway operation. New Unit literature tells about it.

Circle No. 12 on Reader Service Card

Monorail cranes help you save valuable floor space by handling overhead. For a look at the monorail equipment American Monorail Company makes, send for its new catalog.

Circle No. 34 on Reader Service Card

Motor selection stumping you? It needn't. General Electric has a new "show how" course that makes selecting a motor simple as pie.

Circle No. 32 on Reader Service Card

Just set the dials for starting and finish rate on a Rectox industrial truck charger, and you're all set. It's completely automatic. Westinghouse literature gives you the complete dope.

Circle No. 24 on Reader Service Card

Unusually small turning radius and positive traction are two things Moto-Truc Company is proud of in its battery-operated hi-lift walkie. Bulletin 51 tells all about it.

Circle No. 29 on Reader Service Card



*The Talker-all
about Moto-Truc
Walkie*

**SHORTEST
Battery
Operated
Hi-Lift
Walkie
Trucks
Built!**

Unusually small turning radius.

Positive traction is ensured by patented articulating hinged spring unit which holds the drive wheel down on floor. And it's powerful. 12-volt drive for ordinary operation, higher voltage for heavy duty and ramp service.

WRITE FOR
BULLETIN NO. 51

**"IT IS INTERESTING TO WATCH
THE TRUCKER HANDLE IT IN NARROW
AISLES AND SMALL SPACES—IT'S DONE
SO EASILY, AND SO MUCH TIME AND
LABOR IS SAVED IN STACKING.**

Just an easy turn of the wrist on roller type control handle moves the truck in direction of travel. Push buttons in ends of handle operate the hydraulic lift.

And the operator isn't timid, either! He knows the four-point load support and exclusive braking system ensure safety."



RESULTS COUNT. Since turning to palletizing with Moto-Trucs, Thompson Products Co. has been able to use about 25,000 fewer square feet of floor space to do the same job of warehousing and save labor.

The MOTO-TRUC Co.
1953 E. 59th Street
CLEVELAND 3, OHIO.

*Originators and world's largest
exclusive manufacturers of
motorized, battery operated
walkie type trucks*

**HI-LIFT, PALLET,
PLATFORM AND
TRACTOR TYPE
TRUCKS.**

Circle No. 29 on Reader Service Card for more information



TRUSCON STEEL BOXES

just say *"Truscon..."*

Type PB-120
Truscon
Steel Box
and Platform

Type P-1
Truscon One
Piece Steel
Skid Platform

Type PB-120L Truscon
Box and Platform with
full length lifting lugs.

Type B-80C
Truscon Box
Equipped for
Crane Handling

Truscon Double Face
Steel Pallets

*System and neatness are synonymous with
the use of Truscon Steel Boxes and Skids.*

and there's the *box* you need!

Truscon has scores
of different types of steel boxes and skids
to meet a wide range of materials handling requirements.
And if your needs are something special, Truscon has the engi-
neering ability to tailor-make the exact units you require. Truscon's
long experience in steel box and skid design... Truscon's highly
efficient facilities for production and service... Truscon's long association
with box users in every branch of materials handling... these are *plus*
features that make your dollar investment in Truscon Steel Boxes
and Skids so much more profitable. Write for catalog showing
wide range of Truscon Boxes available, and ask for an
experienced Truscon man to help plan
your needs efficiently.



TRUSCON STEEL COMPANY

PRESSED STEEL DIVISION • 6100 TRUSCON AVENUE • CLEVELAND 4, OHIO
SUBSIDIARY OF REPUBLIC STEEL CORPORATION

Circle No. 30 on Reader Service Card for more information

SEPTEMBER, 1951 • FLOW

Job-fitted conveyor equipment is Baughman Manufacturing Company's specialty. Catalog A-57 shows how Baughman equipment fits your needs.

Circle No. 90 on Reader Service Card

Calabar Corporation's fluid power tractor propels monorails or cranes at speeds from 50 to 250 fpm, without jerking or swinging the load. New Calabar catalog tells about it.

Circle No. 103 on Reader Service Card

Detroit Hoist & Machine Company has developed a new pneumatic hoist with rotary type air motor. Detroit's new catalog shows you the hoist in capacities from 250 to 2000 lbs.

Circle No. 74 on Reader Service Card

Transitubes are pneumatic tubes that carry small parts and messages through your plant in nothing flat. Grover Company literature tells what they can do to speed up your parts handling work.

Circle No. 40 on Reader Service Card

Got a lifting problem? "Modern Lifting" is a new booklet written by Globe Hoist Company to help you solve tough lifting headaches in your plant. Shows off the latest in mechanical lifting equipment.

Circle No. 91 on Reader Service Card

(Turn to page 74)

FLOW • SEPTEMBER, 1951

BASIC FACTS ABOUT MODERN MATERIALS HANDLING

HOW IT WORKS — WHAT IT DOES — WHAT IT SAVES

Study of major importance to business and industry is made available by CLARK

A practical, profitable way to produce more goods with the same amount of human effort, is presented simply and graphically in a new booklet offered by the Industrial Truck Division of the Clark Equipment Company, of Battle Creek, Michigan.

This booklet points up technological advances in materials handling operations that are effecting extraordinary benefits for industry—such as faster production, increased economy and efficiency, improved human relations, lower accident and damage rates, quickened distribution and substantial cash savings. Simply and directly it describes tested and

proved means to help speed up and perfect the imperative integration of a military and a civilian economy.

2-BILLION SAVING POSSIBLE

Concretely, this study points up a quick and certain way for Industry to save some \$2,000,000,000* annually at a time when the country, faced with a rearmament program of 50 billions a year for at least three years, is in desperate need of every possible mechanical aid to save time and speed production. Many advantages in other directions, not reckoned in dollars and cents, will be recognized at once by every reader.

This new CLARK study is neither fancy nor complex. It is a well-illustrated, simply-written exposition of the sound and sensible fundamentals on which modern materials handling techniques and practices are based. It describes ways and means of getting the most out of fork-lift trucks, powered hand trucks and industrial towing tractors, at the least possible cost. For the many businesses which have not yet adopted modern handling methods and machines, the booklet will be found invaluable. For the thousands of progressive businesses already employing modern methods and machines, it is just as valuable as a check against omissions, abuses and opportunities for full achievement of production goals and potentials.

SEND FOR YOUR COPY

To get a copy of "Basic Facts About Materials Handling" fill out the coupon, attach it to your business letterhead and mail it to the Clark Equipment Company, Industrial Truck Division, Battle Creek, Michigan. If you want additional copies for key personnel, they are available in reasonable quantities.

* Materials Handling Case Book, McGraw-Hill Book Co., Inc. 1951



CLARK ELECTRIC AND GAS POWERED FORK TRUCKS AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS



INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 13, MICHIGAN

Please send the following: ☐ BASIC FACTS ☐ SAFETY SAVES ☐ CONDENSED CATALOG ☐ MOVIE DIGEST

Name _____

Firm Name _____

Street _____

City _____

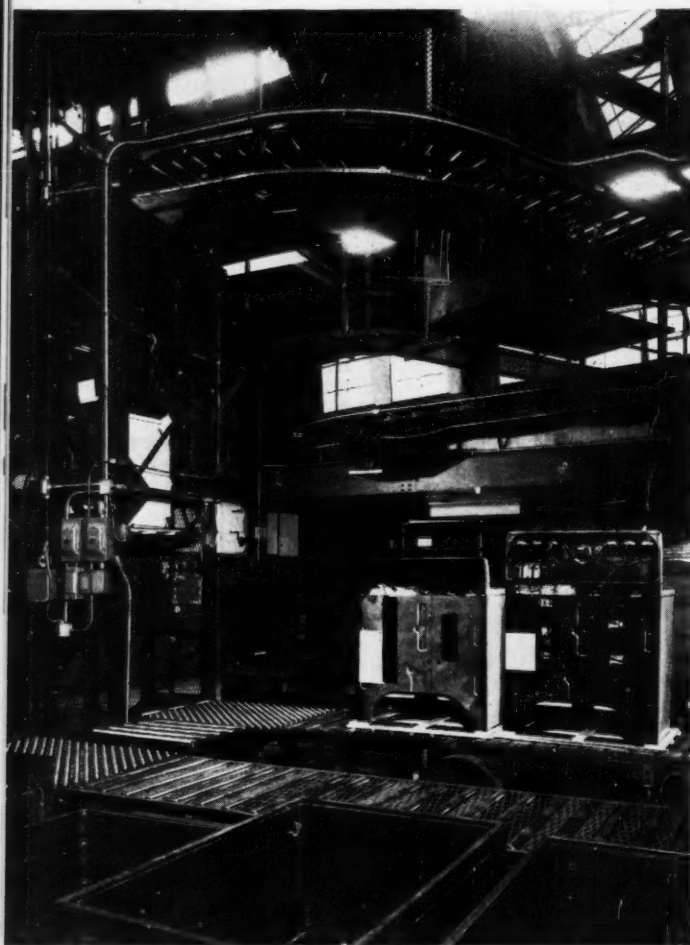
Zone _____

State _____

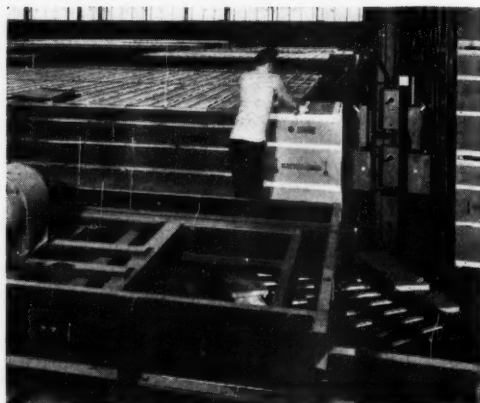
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

Circle No. 31 on Reader Service Card for more information

KEEP IT MOVING AT THE RIGHT SPEED ...WITH CONVEYORS



Complicated conveying jobs like this one, involving the end of two assembly lines, a transfer table, a lift, and an overhead conveyor to the packaging and warehousing area, call for various types of drives. Advising on the selection of the proper motor and control for each section of a conveyor system is a function of G-E Application Engineering.

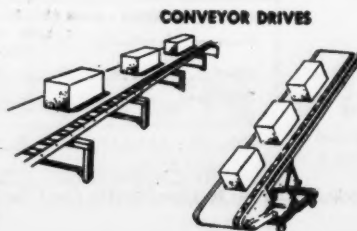


Control devices like the CR7008 combination starters mounted on the column at the right provide complete all-round protection for a-c drive motors and load wiring. G-E standard induction motor at left drives a conveyor section 300 ft. long.



G-E gear-motors are compact, reduced-speed units especially suited to such low-speed jobs as the switching operation shown here. Switching is controlled by a series of conveniently located G-E pushbuttons. Type ACA gear-motors are available where very low adjustable speeds are required.

*Everything
electrical*
for
**MATERIALS
HANDLING**



POWERED by G.E.

FOR CONSTANT- OR ADJUSTABLE-SPEED OPERATIONS . . . G-E CONVEYOR DRIVES GIVE YOU TOP PERFORMANCE

Whether your conveyor operations call for normal, reduced, or adjustable speed, there is a G-E drive just right for your purpose. The G-E Tri-Clad* line of standard induction motors, gear-motors, brake-motors, and Type ACA adjustable-speed motors provides this variety of speed characteristics. By teaming these motors with reliable, easy-to-maintain G-E control—manual or magnetic starters, pushbuttons, limit switches—General Electric can supply co-ordinated drives that will meet any conveyor-system requirement.

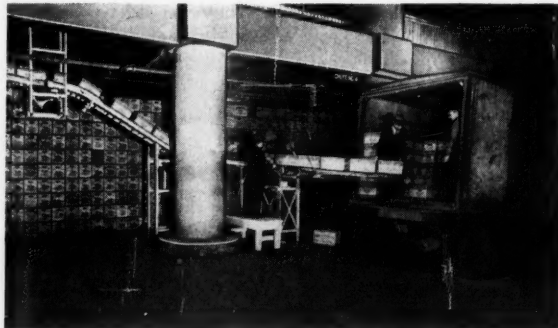
And when your conveyors are powered by G-E drives, you get the benefit of General Electric's years of experience in the development, manufacture, and application of electric equipment. *Reg. trademark of General Electric Co.

ment for all kinds of service. Specify G-E drives on your next conveyor installation. *General Electric Company, Schenectady 5, New York.*

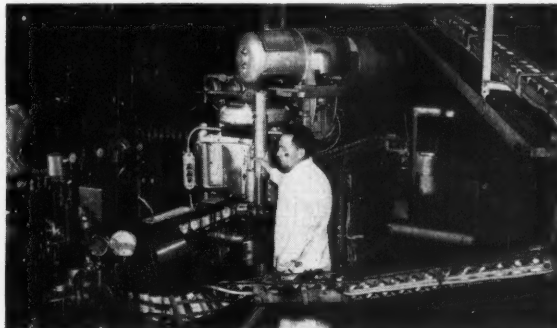
NEW — G-E "Show-how" course simplifies motor selection



Of special interest to the industry is this new General Electric Motor Selection and Application Course—timed to meet today's need for more motor "know-how." A G-E More Power to America program, it shows simply and clearly how motors work, types now in use, how to select and apply them to specific jobs. Ask your G-E representative for a free copy of the course manual, GEZ-310. Meanwhile, send for Bulletin GEA-4938-16 describing the course in detail.



G-E brake-motors are designed for use where it is frequently necessary to stop and hold a load, such as in this loading operation. Internally equipped with the Stearns magnetic brake, they provide reliable, long-life operation. Available in ratings up to 20 hp, 90 lb-ft static torque.

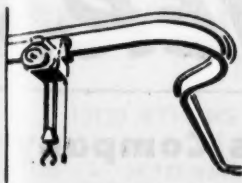


G-E Type ACA motors permit economical stepless speed adjustments in various ranges up to 20 to 1. This beer-can filling line is typical of their conveyor applications which also include assembly-line drives and batching operations. Available in ratings from 3 to 75 hp.

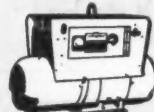
GENERAL ELECTRIC

669-2

HOIST DRIVES



INDUSTRIAL TRUCK DRIVES & BATTERY CHARGERS



Floor Space was a problem in this B.C. plant

BC* (Before Cargotainers) inventory, parts and subassemblies were piled in every available nook and cranny in a chaotic wasteful and sometimes danger-

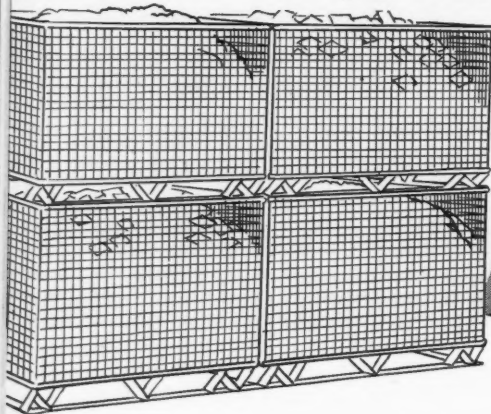
ous manner in this unfortunate plant. Costs went up and man-hours were lost until somebody finally saw the light. The terrible place looked something like this:



Then it went modern and A.C.*

When this plant joined the AC* (After Cargotainers) trend it started a new era of efficiency and profit. Smooth, safe, easy vertical storage took floor space off the critical list and actually made expansion possible without costly construction.

Everything became highly visible for quick inventory check—parts and assemblies remained right in their rugged collapsible Cargotainers as they moved to assembly line and shipment. This enlightened AC* plant now looks like this:



If by some chance, you are still BC why not let a Pittsburgh Materials-Handling Engineer show you how other plants have saved man-hours and storage space

and increased efficiency by joining the AC trend. Write today to Dept. FM, Pittsburgh Steel Products Company, Grant Building, Pittsburgh 30, Pa.

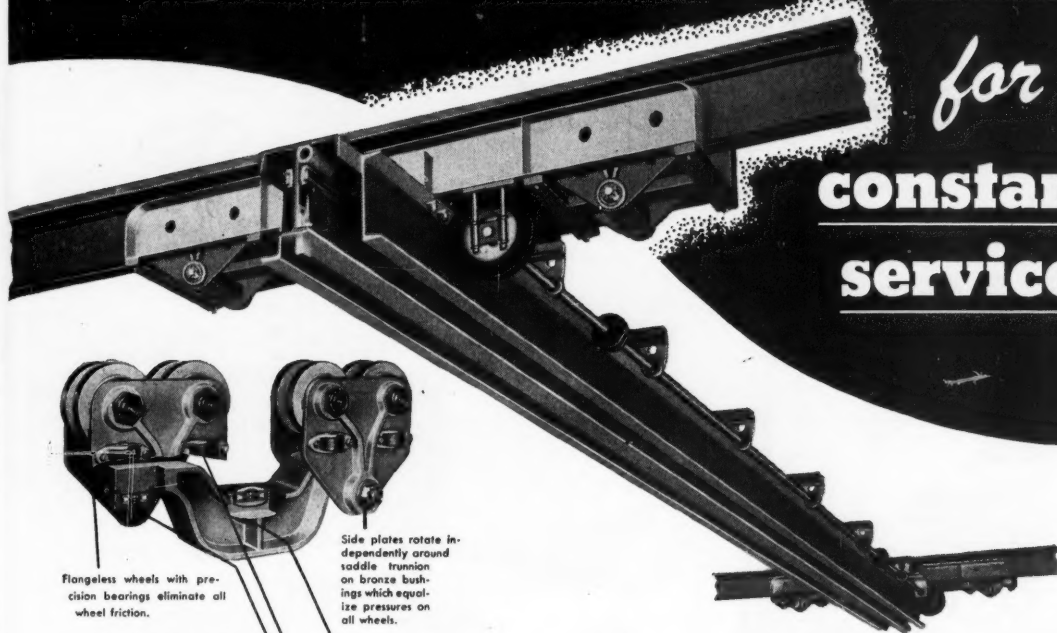
**The Steel
Industry
Needs Scrap—
Keep it Moving**

CARGOTAINERS

by Pittsburgh Steel Products Company
A Subsidiary of Pittsburgh Steel Company

AMERICAN MONORAIL CRANES

for
**constant
service**



Flangeless wheels with precision bearings eliminate all wheel friction.

Load bar is seated in saddle trunnion on Timken self-aligning bearings.

Side rollers with anti-friction bearings hold trolley in positive rail alignment.

Side plates rotate independently around saddle trunnion on bronze bushings which equalize pressures on all wheels.

End truck supporting saddle is seated on Timken self-aligning bearings.



Only two men are needed to transfer bundles from shipping rooms directly into gondola cars—a saving of 32 man-hours per shift over previous method. This crane is in constant service. The secret of its success is Articulated Trolleys.

When each trolley wheel carries its share of the load in perfect alignment with the craneway tracks and all possible friction is eliminated, the result is perfectly articulated trolley travel.

Applied to American MonoRail Cranes, these articulated trolleys permit constant operation—handling loads up to 10 tons. And with this is offered all the flexibility of MonoRail design for interlocking carrier service between and beyond the craneways.

Let an American MonoRail engineer explain all the advantages of these new cranes, or write for complete information.

THE AMERICAN **MONORAIL** COMPANY

13129 ATHENS AVENUE

CLEVELAND 7, OHIO

Circle No. 34 on Reader Service Card for more information

FLOW • SEPTEMBER, 1951

37

MOVE MORE... FASTER
at lower cost...



with
BUDA FORK TRUCKS
and **Attachments**

You can't match the new Buda 2000 lb. capacity fork-lift trucks for speed, economical operation and material handling capacity. Available in pneumatic and solid or cushion-tired models with a variety of time and cost saving attachments. See the new Budas at your nearby Buda Distributors today—they're way ahead in every way!

Write for Bulletin and Complete Data
The Buda Company, Harvey, Illinois



SCOOP



CLAMP



RAM



OVERHEAD GUARD



FORK
EXTENSIONS



LOAD
SAFETY RACK



CRANE ARM



SIDE
SHIFTER



BRICK AND
CONCRETE
FORKS

AND
many others
too numerous
to mention

The Line with All 3 for Diversified Handling



FORK TRUCKS



PLATFORM TRUCKS



TOWING TRACTORS

BUDA

Manufacturers of Diesel and Gasoline Engines, Maintenance of Way Products, Lifting Jacks, Earth Drills and Material Handling Equipment
Circle No. 35 on Reader Service Card for more information

WRIGHT *Again!?*

now...new

FRAME

"B"

Speedway

ELECTRIC HOISTS

● Safety, efficiency, adaptability, and rugged construction are the main qualities of these modern hoists, ideally balanced for hook suspension.

Alloy steel gears, self-lubricating ball and roller bearings, preformed improved plow steel cable, grooved drum, rigid metal weatherproof wire conduits, silver contact controls . . . these are but a few of the features that mean long life and low maintenance of the finely balanced **Wright Frame "B" Speedway Hoists**.

Hook, lug, or trolley mountings permit use of the Frame "B" Speedway in formerly unusable locations.

Capacities from 250 lbs. to 1000 lbs.

Call your distributor today for full information on the Wright Frame "B" Speedway . . . or write to us direct.



ACCO

York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.



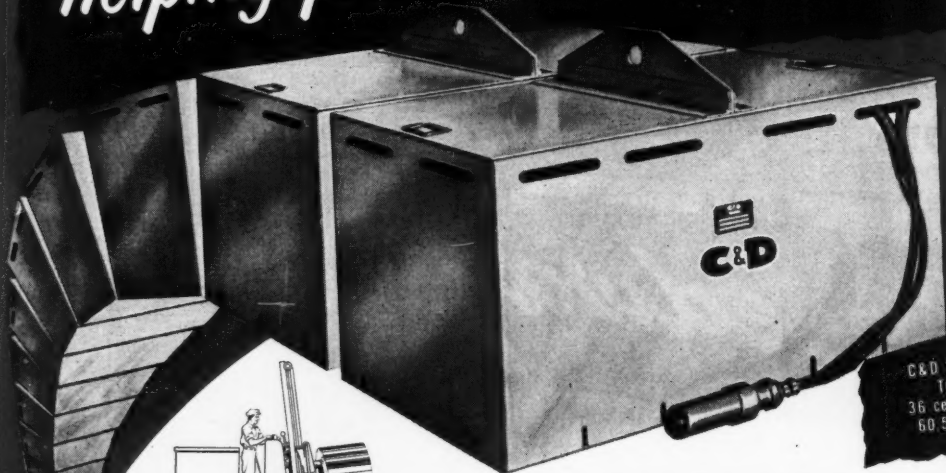
WRIGHT HOIST DIVISION AMERICAN CHAIN & CABLE

In Business for Your Safety

Circle No. 36 on Reader Service Card for more information

"Intentionally Better"
**HOISTS
TROLLEYS
CRANES**

THIS IS THE C&D BATTERY THAT'S helping produce America's steel!



C&D Silyver-Clad battery
Type 36 CHS-17
36 cells, 880 amp. hours
60.50 K. W. hours cap.

● C&D recently supplied the United States Steel Company with a number of these 7652 lb. giants. Installed in a massive ram truck, each battery supplies power to lift 10,000 to 20,000 lb. rolls of sheet steel—part of U. S. Steel's defense production.

It's a tough, grueling job for any battery. But these 36-cell C&D Silyver-Clads, packed with power for a full work shift, are built to do it—day after day. That kind of performance is usual for all C&D industrial truck batteries!

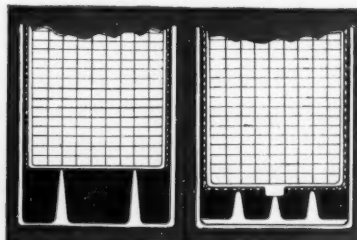
SLYVER-CLAD...

An exclusive with C & D, giving the User the finest retention available. Silyver (infinitely fine parallel glass fibers) is placed vertically against each positive plate's surfaces and around the bottom. Four more specifically designed layers (two glass expansion

mats, a Koroseal retainer, and microporous rubber separators) complete C&D's Five-Fold insulation and retention. Active material is securely held in place where its power-producing ability can be utilized throughout the life of the battery. Sedimentation being practically nil, C&D has used what is normally non-productive sediment space for longer plates. Thus, within the same physical dimensions of the conventional battery, C&D has built the maximum capacity industrial truck battery.

Your plant, too, deserves the extra advantages of these better batteries! Put them to work in your trucks now! Write for:

IT-515 INDUSTRIAL FORK TRUCK BULLETIN
IT-516 MOTORIZED LIFT TRUCK BULLETIN



COMPARE THEM! At left: an ordinary battery with large, unproductive sediment space and integrally molded supporting ribs. At right: a C & D Silyver-Clad showing longer, power-producing plates. Separate rib plate in new double bottom design distributes battery weight evenly over jar base. Negative plates rest on separate center ribs.

C&D

BATTERIES, INC.

OF CONSHOHOCKEN, PA.
(in the Philadelphia area)

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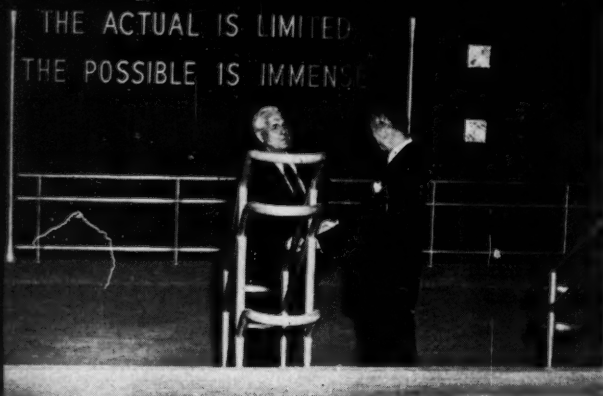
Handling Idea of the Month



Whether you are handling sheet steel, coil stock, bars, angles or structural shapes, a comprehensive survey article in the October issue of FLOW is designed for you. In this report we will show dozens of methods for handling and storing various types of steel. It's designed, too, to be of particular importance for the thousands of engineers who cannot attend the National Metal Congress (as well as the 35,000 who are there) to be held in Detroit in October.

Perhaps the purchase of new equipment will save you thousands of dollars like it has done so many others. Perhaps your present handling installation can be used more effectively to reap new savings and increased efficiency.

FLOW brings you this outstanding survey report, the result of many visits to steel manufacturers and major users of this critical material. Whether you use a ton a month or hundreds of tons per week, there will be ideas in this article which will help you. Be sure to see the October issue of FLOW.



HOST LINCOLN: Welcome to our new plant Mr. Hexter. We've got a lot to show you here.

GUEST HEXTER: That's what I came out for. From all I hear, this plant is a handling man's dream.



GUEST HEXTER: I see everything will be straight line flow. Looks like you're set up for really efficient overhead handling here.

HOST LINCOLN: That's right. We'll have a crane in each of these bays to take material right from receiving to the first work station.



HOST LINCOLN: We're on the second floor of the office section now, looking over one production area. Offices separate the two production areas.

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Built For Better Handling



The candid camera takes you through Lincoln Electric Company's new \$8½ million plant. The building was built around the handling system.

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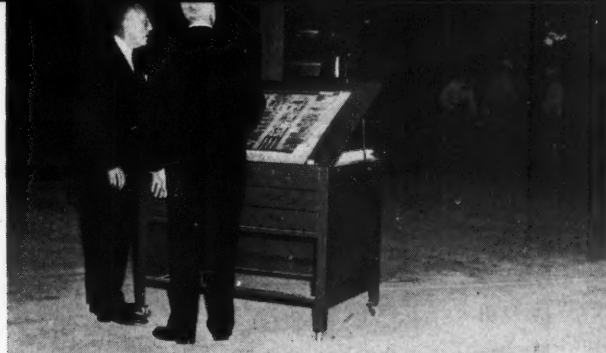
was

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GUEST HEXTER: That's a good way to cut down on unnecessary office personnel traffic through the plant.

"The fact that handling was a large element in our costs was a major consideration in the design and planning of our new plant."

James F. Lincoln, president of Cleveland's Lincoln Electric Company, made that statement to **FLOW** recently. The Lincoln Electric Company is the world's largest manufacturer of welding equipment. Proof that he means what he says is the new 8½ million dollar Lincoln plant, which has been planned to make best possible use of modern handling ideas and equipment. Production employees have started moving in; full-scale production is expected by the end of the year.



HOST LINCOLN: This castered layout board is a sort of rolling information center. It is a master guide for our layout engineers and installation crews.



HOST LINCOLN: These roller conveyors move material from the main line to operators in this sub-assembly area. We tested ideas like this in our old plant then incorporated them in this plant.

GUEST HEXTER: Your plan of testing new installations in the old plant has paid off, hasn't it?

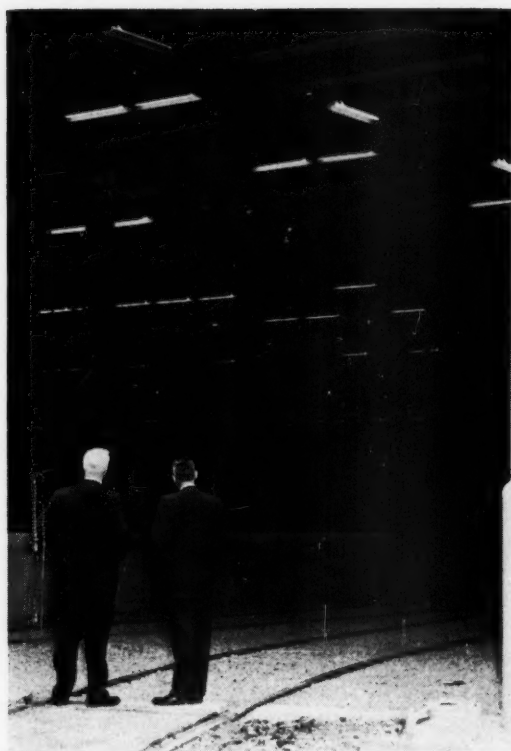
Some of the best ideas; a system of storing all materials right at the point of use; virtual elimination of inventory records ("They're usually wrong, anyway"); a complete separation of production and service facilities for maximum production flexibility in production areas; extensive use of overhead equipment that saves 20% in floor space by reducing aisle width. For a close look at what the Lincoln organization is doing in its new plant, **FLOW** President Irving B. Hexter took a tour of the spanking new building last month. **FLOW**'s candid cameraman tagged along to give you the photos on these pages.

(Turn the page please)



HOST LINCOLN: This adjustable dock ramp is one of 20 we have installed along our docks to speed up receiving and shipping.

GUEST HEXTER: I see you know how important good dock handling practices are in the over-all handling program.



HOST LINCOLN: This is one of four doorways through which rail traffic will enter and leave the plant. We plan to have material brought in only as it's needed. Our inventory will be tied so closely to production that storage will be confined to small areas adjacent to work stations.



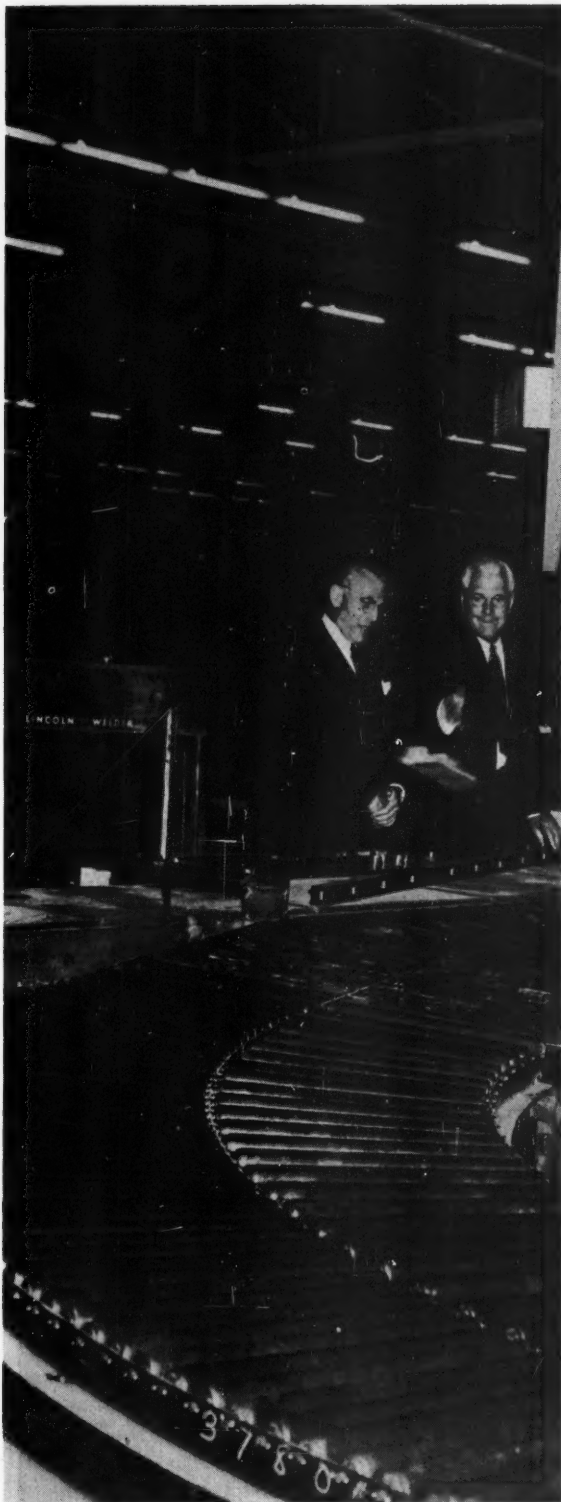
GUEST HEXTER: This looks like a smart idea, painting machine locations and electrical installation points right on the floor. That will save a lot of time when the machines are moved in.



HOST LINCOLN: Here's another time and effort saver. It's a transfer bridge with which cranes in manufacturing bays can be transferred from one bay to another. A load can be picked up and moved to any spot in the plant with one lift. The bridge operates the length of the receiving area.



HOST LINCOLN: Take a look at what makes our conveyors go 'round. It's the power unit and speed reducer for this line. When we're ready to roll, we'll put the cover on.



HOST LINCOLN: This take-off will shunt units from one of the main production lines to a shipping area.

GUEST HEXTER: You've certainly got things worked out to cut down on expensive hand-handling.



HOST LINCOLN: We'll have hoists on cranes like this one in each bay to spot material at the work stations and to move it in and out of production areas. By handling overhead, we save 20% in floor space, and we use that bonus space for more machines.



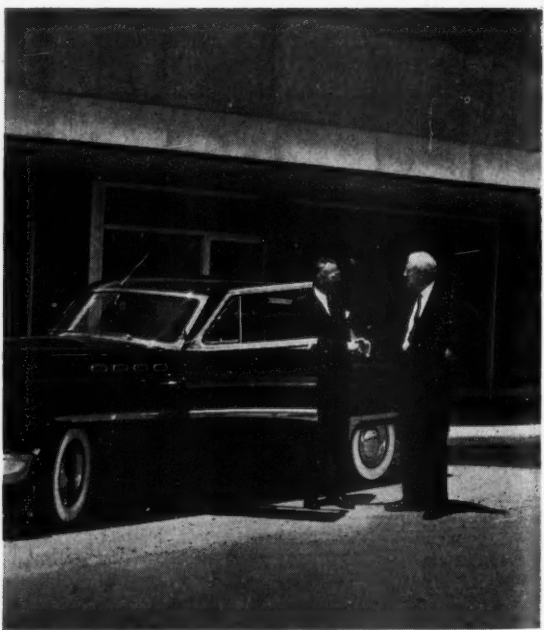
HOST LINCOLN: What do you think of this container? We can nest or stack it, and it can be moved either by fork truck or overhead.

GUEST HEXTER: It really incorporates all-purpose design. Very clever.



GUEST HEXTER: Where are we now?

HOST LINCOLN: Just wanted to step outside for a minute and show you our compressor room and coal silos. Up on top you can see our ash handling machinery, too.



HOST LINCOLN: Well, that's is. It was a real pleasure showing you through our plant. Drop back when we start rolling, won't you?

GUEST HEXTER: I certainly will, Mr. Lincoln, and thanks for the guided tour. Take care of yourself.

An Article You Can't Afford To Miss

What The Handling Engineer Should Know



John Immer is a management consultant and associate of C. G. Chantrell & Partners, Management Engineers, London, England. He was formerly Assistant Professor of Industrial Management, University of Minnesota; author of such books as "Plant Layout Techniques", and a soon to be published book "Materials Handling". He is currently spending two years at Oxford University doing research in industrial history and serving as advisor to various professional groups on education and training for industrial engineering.

By John Immer

The increasing emphasis put upon the improved handling of materials as a means of increasing production and lowering production costs has led to the development of the "Material Handling Engineer". As with many other branches of engineering science, the term has been applied long before there was any general agreement as to what qualifications this man should have.

The objectives and purpose of a materials handling engineer is to provide for the most efficient handling, storing and moving of materials. When this is given a broad interpretation, as it is in most instances, this includes just about every productive activity

except actual machining, processing and assembling time. Even here he may be close on the heels of the tool and die engineer with his suggestions on how to eliminate excess handling.

In order to carry out this assignment effectively, he must be able to analyze production processes from the standpoint of the moving or handling of materials. This is essentially a methods analysis—the type of thing that industrial engineers have been doing for a great many years. The big difference in his analysis, however, is his emphasis on the handling of the product. Nevertheless, he uses the same methods and techniques used by industrial engineers for a long time.

I - Essentially an Industrial Engineer.

This means that the materials handling engineer must be an industrial engineer and have a working knowledge of all the techniques and requirements of that profession. This involves primarily the following subjects:

A. Basic Engineering Background

1. Workshop practice and methods
2. Basic mathematics and drawing
3. Materials; characteristics and qualities
4. Manufacturing processes

B. Basic Business Background

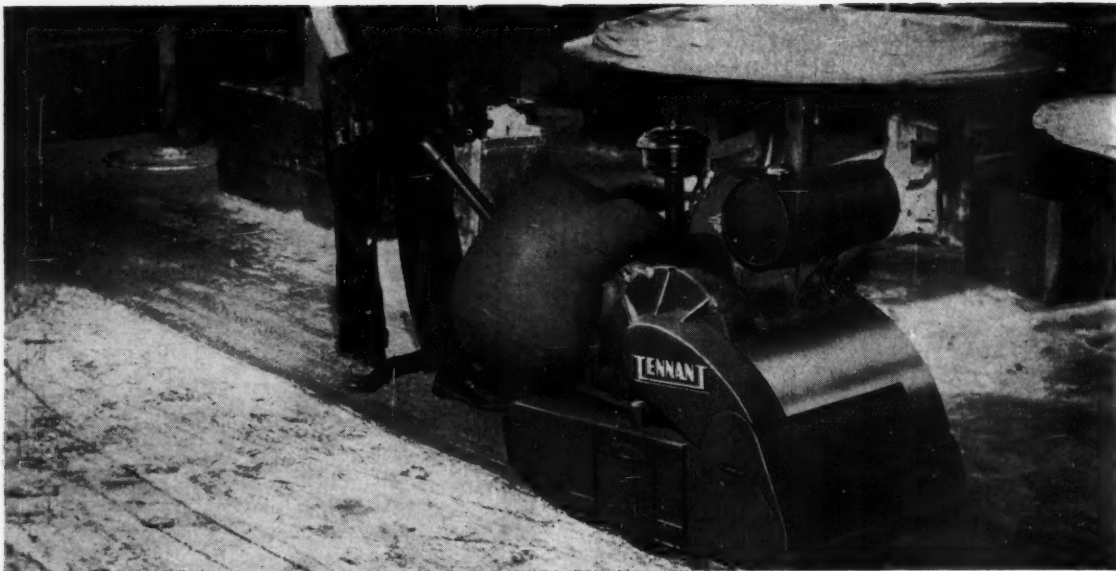
5. Elementary economics
6. Fundamentals of accounting
7. Labor relations and personnel practice
8. Elements of organization and administrative practice

C. Planning and Control

9. Production planning and control
10. Methods analysis
11. Job control and measurement techniques
12. Plant layout

Armed with this background of knowledge and methods, the industrial engineer is equipped to handle any problem of production analysis. His ability to develop special aspects or phases of production will

(Turn to page 66)



THIS INDUSTRIAL FLOOR MACHINE cleans a path 16" wide. Soilage consists of latex particles, dirt, oil and metal chips. A forward rotation of the cleaning-scarifying cylinder gives the machine semi-self-propelling action. The cutting cylinder revolves at 1700 rpm.

"Clean Floors" Doubled Trucking Efficiency

By T. C. Richards, Plant Engineering Dept.
B. F. Goodrich Co., Akron, Ohio

Here are the revealing results of a test to determine the effect of floor cleaning methods on trucking efficiency. It was conducted by the B. F. Goodrich Co., Akron, Ohio.

The test was very simple. The pull required to move a 1430-lb. truck over a dirty floor was measured. Then the floor was cleaned by an industrial floor machine (dry scarifier) and the pull test repeated. Here are some of the details:

1. Location of test: hose braiding room of The B. F. Goodrich Co.

2. Type of soilage on floor: $\frac{1}{4}$ " thick accumulation of bumpy layers of dirt, oil and rubber particles on a concrete floor. This grime is typical of rubber

processing, since powdered soapstone, which is used in coating hose, readily combines with dust and oil.

3. Size of test area: approximately 140 sq. ft.

4. "Before Cleaning" test: A standard cart used to haul finished hose between departments was loaded to its usual weight of 1430 lb. gross. It was then positioned at an arbitrarily selected point on the dirty floor. A 500-lb. scale was then fastened to the cart and a gradually increased pull applied. The reading of the scale was taken to determine the pull needed to keep the vehicle in motion. The pull required: 40 lb.

(Note: the test area was then cleaned with a floor machine equipped with a 16" wide scarifying attachment. The soilage removed from the test area was 50 lb., or 2.8 lb. sq. ft.)

5. "After Cleaning" test: The above pull test was repeated under identical conditions. Pull required: 20 lb.

6. Summary of results: These tests indicated that only 50% as much power was required to move the

RECORD OF SOILAGE REMOVED DURING B. F. GOODRICH TEST

Department	Floor	Condition	Dirt Removed	Approx. Time
Machine shops	Wood block	Grease, oil & imbedded steel chips	887 lbs. from 800 sq. ft.	6 hours
Machine shops	Wood block	Grease, oil & imbedded steel chips; between lathes & machinery	630 lbs. from 675 sq. ft.	7 hours
Tire curing	Wood block	Soapstone, rubber particles	300 lbs. from 120 sq. ft.	4 hours
Hose braiding	Concrete	Soapstone, cotton lint & rubber particles	2623 lbs. from 15,000 sq. ft.	36 hours (416 sq. ft. per hour)

HERE IS THE AMAZING record of the soilage removed from two different types of floors during the B. F. Goodrich test. It was found that the pull required to move a 1430-lb. truck over a sample floor area was reduced 50% after the floor was cleaned by an industrial floor machine (the dry scarifier type).

Trucking Efficiency--Here's Proof:

truck after the floor was cleaned. Also the movement of the load was more smooth and stable, suggesting that equipment maintenance and operating hazards would both be materially decreased.

Old Cleaning Methods Had Many Drawbacks

Before the use of powered scarifiers, floors at the B. F. Goodrich plant were cleaned manually with hand scrapers supplemented by air hammers. This required a disproportionate number of manhours, interfered with traffic. Also, maintenance supervisors found it was difficult to do a smooth, uniform job by hand, particularly in areas where the floor surfaces were somewhat irregular. Here it was found the hand scrapers tended to gouge the floor, leaving small pits or hollows unsuited to fast traffic.

Similar Benefits In Other Departments

Records were kept of soilage removed from floors in other departments. For example: 887 lb. of soilage (grease, oil and imbedded steel chips) was removed

from 800 sq. ft. of wood block floors in the B. F. Goodrich machine shops in six hours. In the tire curing department, 300 lb. of soapstone and rubber particles were removed from a 120 sq. ft. area in four hours. In the hose braiding department, a total of 2623 lb. of soapstone, cotton lint, and rubber particles was removed from 15,000 sq. ft. of concrete floor in 36 hours. Floors in this area were cleaned at the rate of 416 sq. ft. per hour.

Five Important Reasons

Summed up B. F. Goodrich made these statements with regard to mechanized floor cleaning equipment: (1) floors are cleaned faster than by manual methods, freeing maintenance men for other vital jobs, (2) the equipment leaves a cleaner, smoother surface for easier trucking, (3) it eliminates the need for water, detergents, chemicals or hand scraping, (4) the operations can be performed without material interference with plant operations or traffic, (5) floor cleaning costs were greatly reduced.

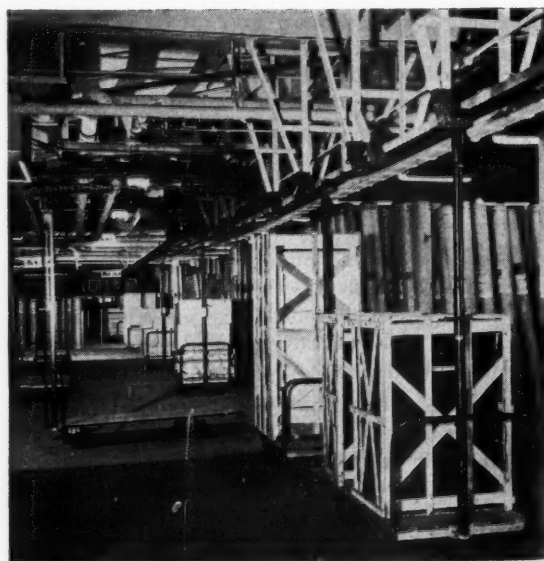


FAST DOUBLE-DECK CONVEYORS (the live roller is driven by return belt), add flexibility to order picking system. Baskets can be mounted on carts or placed on the belt which feeds packing department.

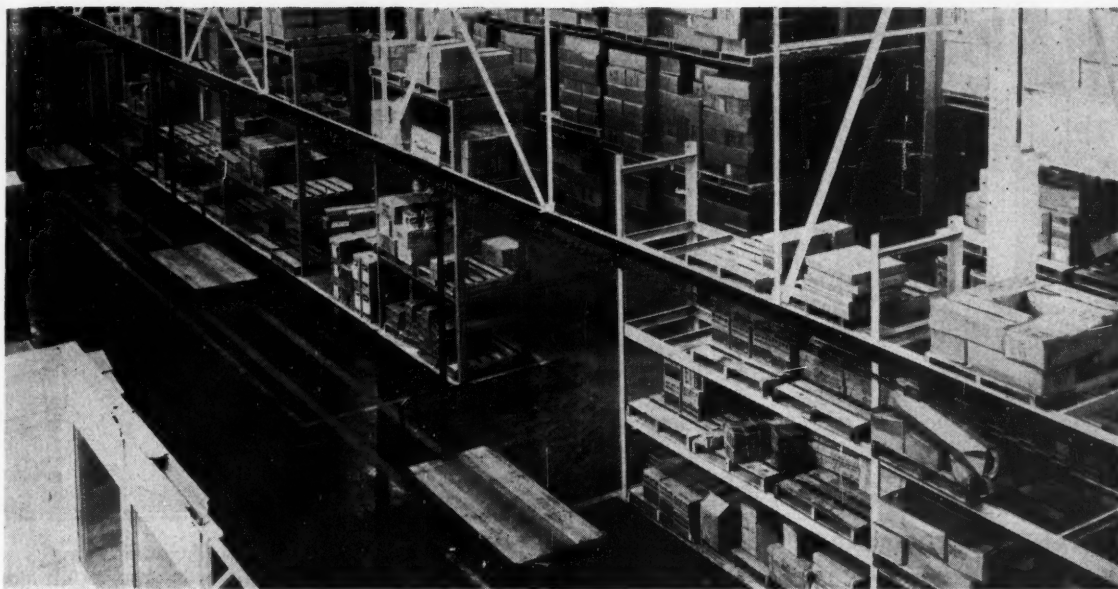
Here Are Warehousinglet



BELT AND LIVE ROLLER CONVEYORS, equipped with traffic control devices, speed merchandise from the dry goods department direct to packing.



AT THE DISCHARGE END of the trolley conveyor, two trucks, foreground, were pre-set for delivery to shipping; others will continue around the line.



TRUCK-TOWING TROLLEY CONVEYOR is the main artery of flow. Note the orderly manner in which merchandise is stored. This contributes to the ease of order picking, permits maximum use of space.

Single Methods at Their Best

Earlier this summer, Zion's Cooperative Mercantile Institution, Salt Lake City, officially opened one of the world's most modern and highly mechanized distribution warehouses. The building, just 15 minutes from downtown Salt Lake, contains nearly one-half million sq. ft. of warehouse and working space, and stocks over 100,000 different items of merchandise.

The warehouse is completely conveyORIZED. The details: two overhead trolley conveyors, each about 1/4 mile long, travel through the furniture and hardware departments on the first floor; each conveyor operates independently. At no place need an operator move more than 20 yards to pick up merchandise and place it on the moving conveyor which feeds directly to the packing department.

Trucks, towed by the conveyors, can carry up to one ton of merchandise, and can be stopped at any point, or loaded as they travel. The masts are equipped with a selector arrangement so that each truck can be pre-set to shunt off automatically at the

shipping dock, or to continue in the moving line. Fork trucks load heavy pallet loads on carriers as they travel.

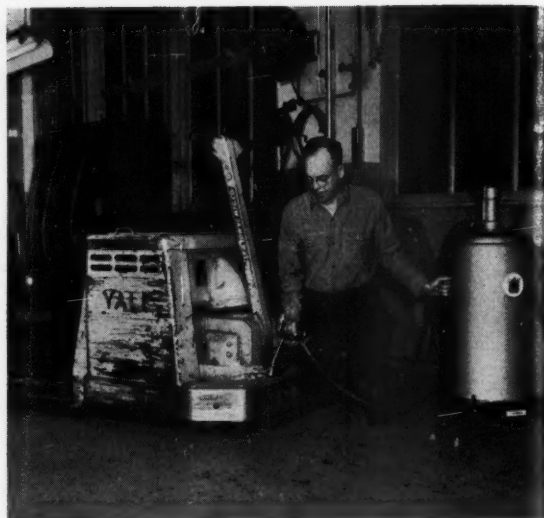
Belt and live roller conveyors serve the dry goods and drug departments; the latter is on the mezzanine. Order pickers, traveling on roller skates and bicycles, select and load merchandise into baskets, then place the containers on the belts which speed to packing.

Advantages in the new warehouse: customer orders that used to take days to fill, now can be handled in a few hours; paper work, which used to be carried by hand, is now whisked to its destination by pneumatic tube conveyors. The receiving docks, which formerly handled four freight cars, now unload 14 at one time; and from the docks two belt and gravity conveyor lines speed the merchandise to either the mezzanine or first floor storage areas.

In addition to better, faster handling within the warehouse, customers are served more promptly. Operating conditions are top-notch, traffic flows to and from the plant with the same efficiency as within.

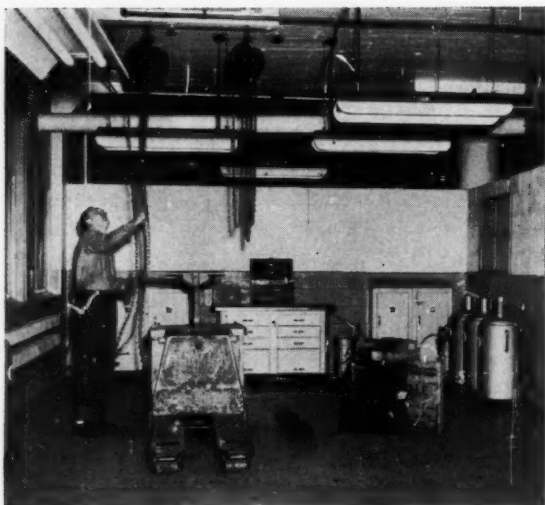


PERMANENT RECORD CARD gives a two-year record of lubrication, mechanical and electrical services performed as well as cost of work done. It also tells what services are currently needed.

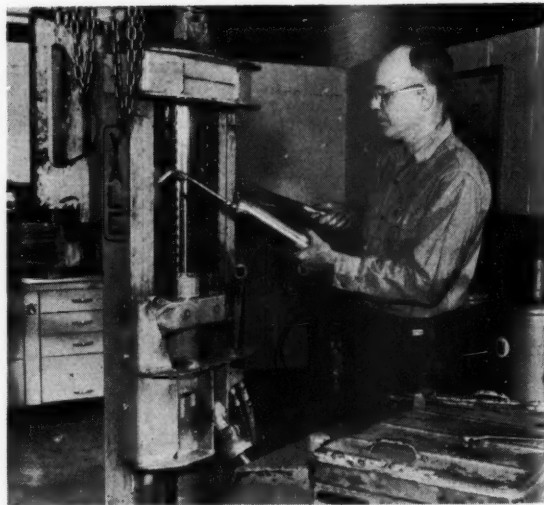


AIR-OPERATED high pressure lubrication pump with standard hydraulic coupler is used to lubricate all top-side fittings. The operator also checks for damaged or missing fittings at the same time.

How To Set Up an Effective Lubrication Program



CHAIN HOIST, used for raising parts for replacement, removing batteries, or handling other lifting jobs, is readied to assist in tilting unit to get at under-side lubrication points.



BACK OF SPECIALIZED GUNS, with angle and other couplers or extensions to reach every type and location of fitting—and containing lubricants prescribed by truck manufacturers—is vital.

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	LUBRICATION REQUIREMENTS					ELECTRICAL CHECK		MECHANICAL CHECK	
	4 WEEKS	8 WEEKS	12 WEEKS	24 WEEKS	48 WEEKS	4 WEEKS	4 WEEKS	4 WEEKS	4 WEEKS
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THIS SIMPLE CHECK SHEET keeps tab on Stewart-Warner's industrial trucks. Each vehicle has its own sheet which records type and date of service performed. Can this simple record system help you?

Lubrication Program

These days, when it is necessary to keep every piece of powered rolling equipment "on the job", it is vital to check into your truck lubrication program.

The Stewart-Warner Corp., Chicago, recently set up a central lubrication and service department to eliminate major repairs by catching them while troubles were just developing, and to make certain that essential lubrication services were performed to truck manufacturers' specifications.

Here's how the company keeps tab on its vehicles: each truck is called in on the corresponding day of each four week period. Each is checked against:

(a) its own individual service card to ascertain what was done the previous time it was in and what specific lubrication or other services are due this time,

(b) the truck manufacturer's own lubrication chart and service recommendation,

(c) its own mechanical service record, to assure inspection and check of any recently replaced parts, or to check on a condition which had been noted for follow-up now at the time of the last visit.

Take a look at the pictures on this page to see Stewart-Warner's lubrication methods and also some important tips for your own lubrication program.

Stewart-Warner Lists These 8 Checkpoints To Help You With Your Lubrication Program.

1. Neglected or faulty lubrication can cause more repair bills, more parts replacement and more "down time" than the wear and tear involved in normal operation of your trucks.
2. There is a proper lubricant for every gear box, every bearing—for every lubrication condition. Find out which lubricants are the best to use and *don't* sacrifice good quality.
3. The truck manufacturer put the same skill into the lubrication system as the rest of the truck. Don't undo this by (1) neglecting lubrication, (2) employing wrong lubricating methods, (3) using wrong or poor lubricants.
4. Give your maintenance man the proper tools to do his job. Nothing encourages neglect more than not having the right grease gun, proper lubricants, replacement fittings, etc.
5. Keep accurate records. Your car dealer can tell you the history of your car's servicing. Accurate records are a vital key to scheduled lubrication of your industrial trucks, too.
6. Eliminate guesswork on (1) where to lubricate, (2) when to lubricate, (3) what lubricant to use. Follow the truck manufacturer's chart. There's one designed for every truck.
7. Be certain the man who does your lubrication job knows his equipment, his material and his job. Emphasize the investment in each truck, the hazards of costly repair bills, idle time.
8. When in doubt, call on the expert knowledge, experience and willingness of your factory salesman, sales representative and your oil company salesman. They stand ready to help you.



TIRES ARE PALLETIZED at the loading dock and moved to storage locations by fork truck. Pipe supports take weight off the lower pallet during stacking.

Odd-Shaped, Fragile Items also came



FORK TRUCK stacks tires to a height of 13 ft. As many as 126 tires can be stored in a five-ft. square area. Tires are always protected.



CASED GOODS are received palletized and strip glued. Twelve pallet loads are unloaded in 25 to 30 minutes. Gluing steadies pallet loads.



SPACER BOARDS prevent damage to batteries during stacking. System allows units to be charged on the pallets from conveniently located charging equipment.

Safe Safely Handled and Stored

Take Tires and Storage Batteries, For Example...

Harold F. Meyer, Plant Manager
TBA Terminal, Socony-Vacuum Oil Company
Brooklyn, New York

Many people run into all kinds of trouble when they try to figure out a way to store large amounts of tires and batteries. There are two important factors to keep in mind. In the first place, you can't place too great a load on tires when stacking because it damages their sides. Therefore, any method to utilize the cube when stacking tires must prevent any undue pressure on the lower stacks.

When you store batteries a similar problem comes up. Batteries can't stand any weight on them even though their size and shape permit palletizing. A second problem is that batteries must be charged even in storage. This is the way we have solved these baffling problems.

Now We Can Palletize Tires

Before we moved into our present building there was no such thing as palletizing tires. Needless to say, we wasted a lot of valuable air space. We used to roll tires like a hoop from the incoming truck to the stacks inside the warehouse. Everything was hand-stacked; the height of the pile was governed by how high a man could reach. In a five-ft.-square area we could get only 70 tires.

Now it's all different. Tires are palletized at the receiving dock and fork trucked to the desired area in the warehouse. To take the weight off the lower pile (when stacking one pallet load on top of another), we devised a special type of rack. Flanges are screwed to the four corners of the deck of the lower pallet. Pipe sections, five ft. high, are screwed into the flanges. The five-in. flange at the top of the pipe supports the weight of the upper pallet.

In this way we protect the tires and get as many

as 126 units in a five-ft.-square area. And our loads are stacked to a height of 13 ft. without any manual effort.

Batteries Unloaded In 1/5 The Former Time

Talk about needless manual handling—we had it the way we used to unload and stack batteries. The units weigh 45 lb. each. When a truck pulled in, a gang of men had to unload the batteries and carry each one 50 to 60 ft. to the storage area. Altogether, it took at least 15 manhours to unload an average truck—and some mighty pretty strong muscles.

Today, with pallets and a fork truck, we can unload the same truck and stack batteries in less than three manhours. And all muscle work is eliminated.

Stacking caused another problem however. Since batteries can't take weight, we had to develop some way to prevent upper pallets from resting on the units. We solved this by inserting 9½" x 10½"

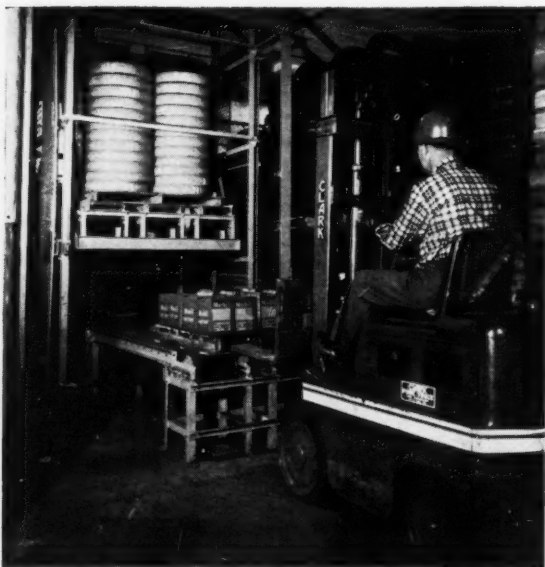
spacer boards vertically between rows of batteries. Placed in a 1-3-3-1 arrangement, they completely support the upper pallets. Loads can now be stacked eight high to a height of 8½ ft. We have even placed charging equipment at various points around the storage area and charge the batteries right on the pallets. Twelve batteries can be charged at one time.

Cased Goods Are Received On Pallets

Specialties (oils, polishes, etc.) are received by us on pallets with the cases interlocked and strip glued. As many as 228 cartons make up a load unit, which are stacked three high to a height of 13 ft. An average highway carrier can be unloaded in less than 30 minutes using a "walkie" truck.

What it all adds up to is a mighty smooth warehousing operation. The methods we use today are the result of trial and error plus a lot of thought and experimentation. It has really paid off for us though.

Conveyor-Elevator Moves Palletized Goods Between Floors



PALLETIZED BATTERIES are deposited on belts of automatic lift section. Tires are on way to the second floor where they can be stored.

To move palletized goods between floors, T.B.A. warehouse has installed a unique inter-floor conveyor that's as automatic as they come. Here's how it works:

A fork truck operator on the first floor deposits his load on a horizontal belt section. As he backs off he pushes a button on a building column. The belts move the load forward onto a platform made up of identical belt conveyors. As the load moves to the end of the platform it actuates a switch and the hoist-operated



ON THE UPPER LEVEL, a driver approaches the tires as they come rolling out of the lift on the belt conveyors. Everything is automatic.

platform rises to the second floor.

On the upper level, the vertical movement stops and the belt conveyors move the load out onto another set on the floor. Here the pallet hits a switch and stops waiting removal by another fork truck.

The lift may be set to travel either way. After the vertical section has delivered its load, it returns to the floor from which it started. Safety devices prevent feeder belts from transferring unless the lift platform is in position.

HANDLING AND PACKAGING DATA SHEET

Reprinted from the

FLOW DIRECTORY

PACKAGE SIZES FOR SHEET METAL SPIRAL CHUTES

MAXIMUM SIZES OF PACKAGES ON SPIRALS

(Based on 23° Outside Pitch)

Outside diameter of spiral ft. in.	Inside or core diameter					
	10 in.	16 in.	18 in.	2 ft.	3 ft.	4 ft.
	(Length × width × height)					
	(L×W×H)	(L×W×H)	(L×W×H)	(L×W×H)	(L×W×H)	(L×W×H)
3 6	20 7 7	18 6 5	.....	.....	.....	.....
	15 8 8	12 6 6	.....	.....	.....	.....
	11 9 8	9 7 6	.....	.....	.....	.....
4 0	28 8 7	24 7 7	20 7 7	.....	.....	.....
	24 9 9	18 9 8	16 8 8	.....	.....	.....
	16 12 9	12 10 9	12 9 9	.....	.....	.....
5 0	36 12 10	32 11 9	30 10 10	.....	.....	.....
	25 15 14	22 14 10	20 13 12	.....	.....	.....
	20 16 16	18 15 11	16 14 13	.....	.....	.....
6 0	40 16 16	36 16 14	32 16 14	30 14 12	.....	.....
	30 20 16	28 18 16	26 17 16	24 16 12	.....	.....
	24 21 20	22 20 16	20 18 18	19 17 14	.....	.....
7 0	50 20 14	46 18 16	42 18 18	38 18 14	.....	.....
	40 24 15	36 22 18	32 21 20	30 20 16	.....	.....
	30 26 20	26 24 20	25 23 21	24 21 19	.....	.....
7 6	56 21 13	52 20 15	48 20 16	44 18 18	40 15 13	.....
	44 24 20	40 24 19	36 24 19	34 22 18	32 17 15	.....
	32 28 22	30 27 20	28 26 20	26 24 18	24 19 14	.....
8 0	60 22 16	54 21 19	50 22 19	46 21 19	42 18 14	.....
	48 26 20	44 26 19	40 26 20	36 24 20	34 20 15	.....
	36 30 24	34 28 22	32 28 21	30 26 20	26 21 19	.....
9 0	.....	.....	60 24 22	56 24 20	50 21 19	44 18 16
	.....	.....	48 28 26	44 27 25	40 24 20	36 20 17
	.....	.....	36 32 28	32 30 28	30 26 23	28 22 17
10 0	.....	.....	72 27 20	66 26 23	60 24 20	50 22 19
	.....	.....	60 32 23	52 30 30	46 28 24	40 24 22
	.....	.....	48 36 25	40 34 30	36 30 28	32 26 24
12 0	.....	.....	.....	.....	80 30 24	72 28 23
	.....	.....	.....	.....	60 36 30	56 33 26
	.....	.....	.....	.....	44 40 36	40 36 32
14 0	.....	.....	.....	.....	.....	84 36 31
	.....	.....	.....	.....	.....	66 42 34
	.....	.....	.....	.....	.....	52 45 36
16 0	.....	.....	.....	.....	.....	84 38 32
	.....	.....	.....	.....	.....	66 43 36
	.....	.....	.....	.....	.....	52 46 40

NOTE ON PITCHES: The average pitch on the outside edge of the blade, and the one that is suitable for such as wood cases with smooth bottom, is about 23 degrees. Such commodities as bags and bales require usually several more degrees to the pitch, whereas boxes that are metal bound or equipped with metal runners will travel satisfactorily as a rule on a blade set at a less pitch than the average.



AIR HOIST at the start of assembly line is used to handle heater assembly while insulation is being wrapped around inner jacket. Then the hoist lowers unit onto a pallet that winds up on the shipping dock as the heater crate base.

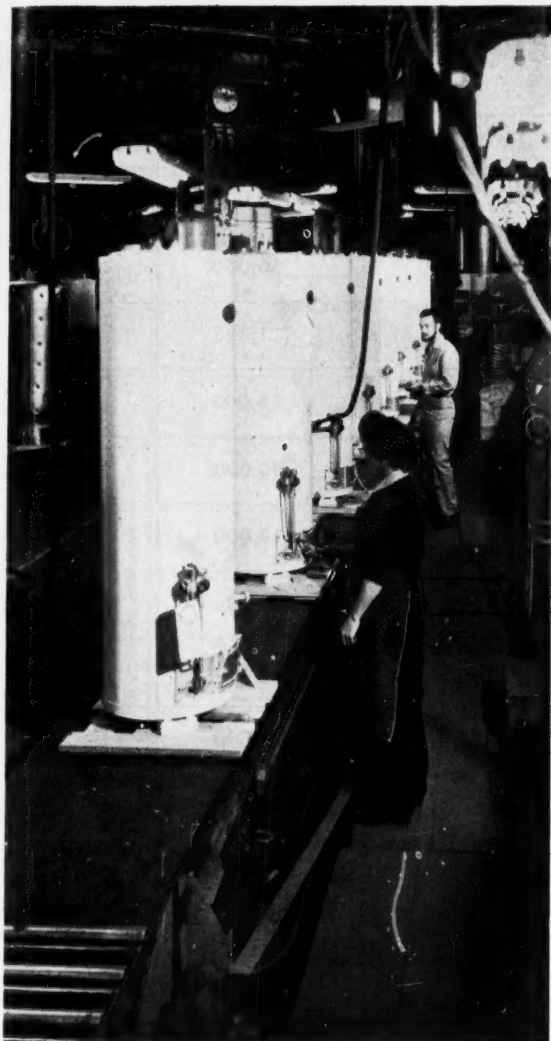
New Layout and Handling Equipment Ju

**Roy L. Tribble, General Supt.
Security Manufacturing Co.
Kansas City, Mo.**

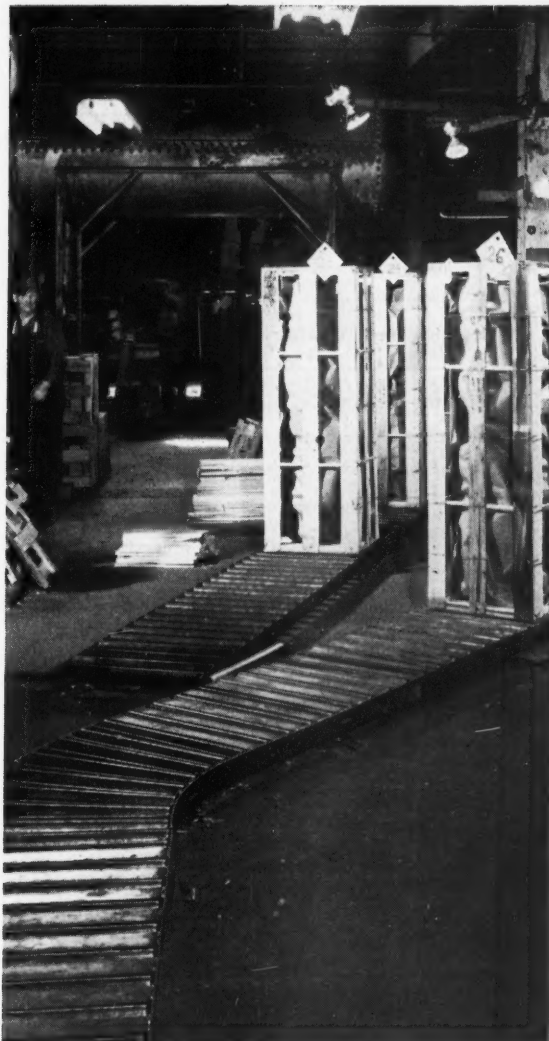
Think you're stuck with an outdated building? Some parts of our plant were built back in 1902 when an Edison Electric was the fastest thing on the road! But by reshuffling our departmental layout and put-

ting in new handling equipment we jumped up our production 30 per cent.

When one production division was discontinued recently, we decided to use part of its space for the assembly of our domestic water heaters. These heaters used to be assembled on the second floor of our three-story building. Shearing and prefabrication of parts was done on the ground floor. This setup added



24' x 40' BELT takes units down assembly line. Pit was built into line to keep tall heaters at easy working height for operators.



ROLLER CONVEYORS take over the complete assemblies for crating. A prepared crate saves time and trouble here.

ent Jumped Production 30 Per Cent

heavily to the volume of floor-to-floor traffic of in-process parts (up) and finished heaters (down). Our elevators, already overworked with the tonnage of parts for our other products, were taking a beating.

For ease in handling, the water heater line on the second floor used to be at two levels. This required the heaters to be hoisted from the lower to the higher level, then from the assembly conveyor to the floor

At that time we did the painting of the jackets by hand and baked them in a gas oven. Now painting is done by an electrostatic spray, followed by an infrared baking process, with both operations served by a continuous chain conveyor.

The big challenge in the relocation was to fit the assembly line into the 71'x103' space that was available for crating.

Turn to page 78

These 12 Companies Proved That Handling Equipment Pays

NAME OF COMPANY	NO. OF EMPLOYEES	\$ INVESTED	\$ SAVINGS SO FAR	PER HOUR
Keystone Steel & Wire Co.	2300	\$180,000	\$30,000	—
Westinghouse Electric Corp.	100,000	50,000	25,000	—
Inland Steel Container Co.	450	1,125	—	—
Pitman-Moore Co.	850	15,000	—	—
Aldens, Inc.	4000	50,000	20,000	—
Bell & Howell Co.	2069	19,000	—	—
Uarco, Inc.	800	52,000	30,000	—
Bemis Bro. Bag	700	23,500	—	20,000
Diamond Chain Co.	1500	50,000	—	20,000
A.O. Smith (Water Heater Div.)	900	30,000	80,000	—
International Harvester (Ft. Wayne)	7015	200,000	—	24,000
DeVilbiss Co.	1600	6,000	6500	—

How To Sell the Importance of Handling Equipment

Here are some hard solid facts to help you sell the importance of material handling equipment to your management. We asked a cross-section of American industry to tell us what savings they had realized with handling equipment they installed in 1950. From these answers, we have made up the chart which appears above.

You will notice that savings are proportionately the same for both big and small plants. Also that savings are not restricted to any given industry.

In addition to the chart, we have also included some statements from top-level operating executives. They tell you why their firm feels the way it does about material handling and how they sold (or were

Shipments Profits . . .

SAVINGS SO	HOURS SAVED	PRODUCTIVITY INCREASED
\$30,000	—	—
25,000	—	—
—	—	5 %
—	—	15 % to 20 %
20,000	—	—
—	—	40.3 %
30,000	—	—
—	20,000	20 %
—	2000	—
80,000	—	—
—	2445	—
6500	—	—

of Handling Equipment

sold) material handling in their plant. Let their experiences help you too. Call their remarks to the attention of your management. They should be interested in what other men with the same positions and responsibilities have to say on this very important subject. These men have already found that material handling is vital in their plants.

Top-Level Management Tell Why Material Handling Is Vital In Their Plants

C. A. Salmonsens, Manager of Manufacturing, Large Apparatus Divisions, General Electric Co., Says:
"Take The Over-All Approach. . . .

Not one experience, but many, have convinced me that efficient material handling is an absolute must in any modern manufacturing organization. All of these experiences do point up two main facts:



C. A. Salmonsens

"The first is that the most effective materials handling is obtained by an over-all approach—that is, considering the material handling of an organization in the light of the complete manufacturing cycle."

The second fact is that perhaps the greatest single area for effecting a shorter cycle, and achieving the resultant savings, is in the elimination of excess movements and stocking between machines or work stations. Anything, be it device, system, or combination of the two that reduces handling and can keep those parts moving to the next station before the advantage of faster machining is completely lost, will ever be a major factor."

James F. Lincoln, President, Lincoln Electric Co. Says: "Material Handling Can Be The Major Cost Element. . . .

Material handling operations are the most wasteful operations of all those performed in industry today. It is also true that material handling operations often receive the least attention from industry. Because of these facts, material handling is today generally the largest single element of manufacturing costs."



J. F. Lincoln

"As efficiency of production goes up and production costs come down, the cost of material handling rises sharply. As these trends develop, eventually the point is reached where the cost of material handling is the major element of cost. Production efficiency in industry is generally rising and, therefore, the problem of material handling is critical."

(Turn the page please)

H. E. Grout, Works Manager, Small Motor Division, Westinghouse Electric Corp. Says: "Material Handling Can Lower The Cost Of Our Product, Improve Our Competitive Position. . . ."

Material handling costs money. From surveys conducted by qualified engineers, it has been found that on materials being processed, as much as 60% of the time spent is for handling the materials at the work station, while the balance of the time is used for doing the actual work. In addition, there are costs involved in getting materials to and from work stations with the attendant problems of control of shipping stock inventories and shipment to the customer. All of



H. E. Grout

this adds up to a sizable portion of our manufacturing costs, and therefore, an area which assumes great importance in our efforts to reduce costs of all types."

"Although great strides have been made in the direction of better handling of materials and therefore in reduction of costs involved, there remains a great area in which improvement can still be made. We feel that this program directed at cost of handling materials can make a major contribution to our efforts to reduce the cost of our product and thereby maintain and improve our competitive position, in a highly competitive industry."

C. W. Noller, Chief Industrial Engineer, Bell & Howell Co. Says: "Will The Purchase Pay Off In The Long Run. . . ."

Since we use motion pictures extensively throughout our plant in evaluating and improving operations, these same films oftentimes indicate areas where material handling methods can be improved. When the area for improvement is ascertained, the next step is to determine as closely as possible the savings as well as other advantages that would result from the use of better handling methods."



C. W. Noller

"There is, of course, the problem of deciding upon the make of equipment to be purchased. In making this decision, the following are considered: 1. the durability of construction of the unit; 2. dependability and ease of operation; 3. operating and maintenance costs; 4. total cost of the unit; 5. capacity to do a given job; 6. safety features."

"In addition, we make an actual cost computation of the savings that would result from the use of the

better methods and newer equipment. Before any capital equipment of any nature is purchased by the company, a very careful analytical job is performed to determine whether the purchase is warranted and whether it will pay off in the long run."

William A. Delger, Vice President In Charge Of Manufacturing, The DeVilbiss Co. Says: "Illustrate The "Before" and "After". . . ."

It has been our experience that to sell management on a major program of material handling, we could best achieve our objective by breaking the problem into two segments: (1) the cost and savings involved in reducing total handling manhours; and (2) increased productivity through elimination of downtime while waiting for materials to be delivered to the machines."



Wm. A. Delger

"By setting up facts to illustrate "before" and "after", we first set up a picture illustrating existing costs—then we prepare a projected "after" picture which includes estimated costs based on our own standards as well as standards supplied by equipment manufacturers and other firms we survey."

William E. Parris, Vice President in Charge Of Manufacturing Willys-Overland Motors Says: "We Use A 14 Point 'Will It' Outline. . . ."

Here at Willys-Overland we take a very practical approach to material handling. Material handling sells itself.

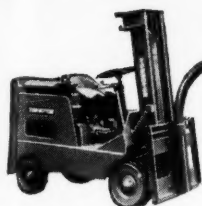


Wm. E. Parris

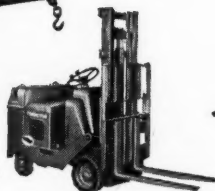
"Before approaching a problem, we take into consideration a 14 point 'will it' outline. In short—will it: (1) produce a better product; (2) eliminate accidents; (3) reduce costs; (4) improve morale; (5) increase production; (6) release floor space; (7) improve housekeeping; (8) reduce waste; (9) reduce scrap; (10) improve sanitation; (11) improve other working conditions; (12) provide insurance benefits; (13) provide tax benefits; (14) increase or decrease maintenance."

"All 14 classifications are carefully taken into consideration and a complete study and analysis is made before a verdict is made. If the advantages warrant and the amortization period conforms to company policy, the program is adopted. If it doesn't, it is filed for future reference with the possibility that altering conditions may make it acceptable at a future date."

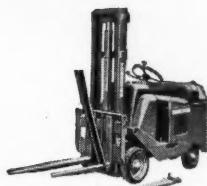
(Turn to page 72)



CRANE ARM



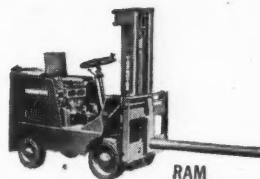
EXTENSION
BACK REST



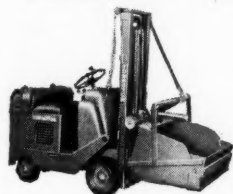
FORK EXTENSION



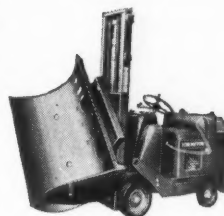
OVERHEAD
GUARD



RAM



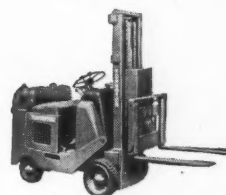
SCOOP



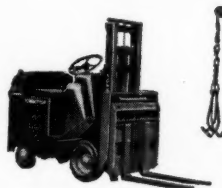
UPENDER



UNLOADER



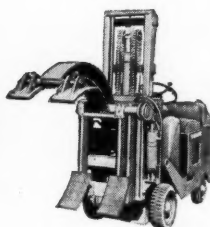
REVOLVING CARRIAGE



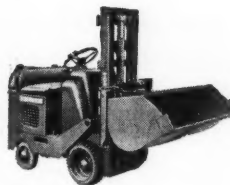
SIDE SHIFTER



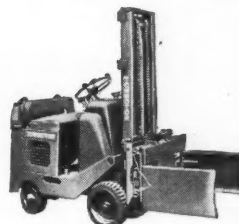
COTTON TRUCK



ROLL GRIP-UPENDER



HYDRAULIC SCOOP



BALE CLAMP

*Regardless of your
Material Handling Problem—
WE'LL BET ONE OF THESE
TOWMOTOR ACCESSORIES
can help solve it!**

** If not—TOWMOTOR SPECIAL ENGINEERING will develop the answer!*

HANDLES
ANY TYPE
MATERIAL

TOWMOTOR
THE ONE-MAN-GANG

FORK LIFT TRUCKS and TRACTORS

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

TOWMOTOR CORPORATION, DIV. 8
1226 E. 152nd St., Cleveland 10, Ohio

Send free folders describing the 14 Standard
Towmotor Accessories, and Towmotor's Spe-
cial Engineering devices.

Name _____

Address _____

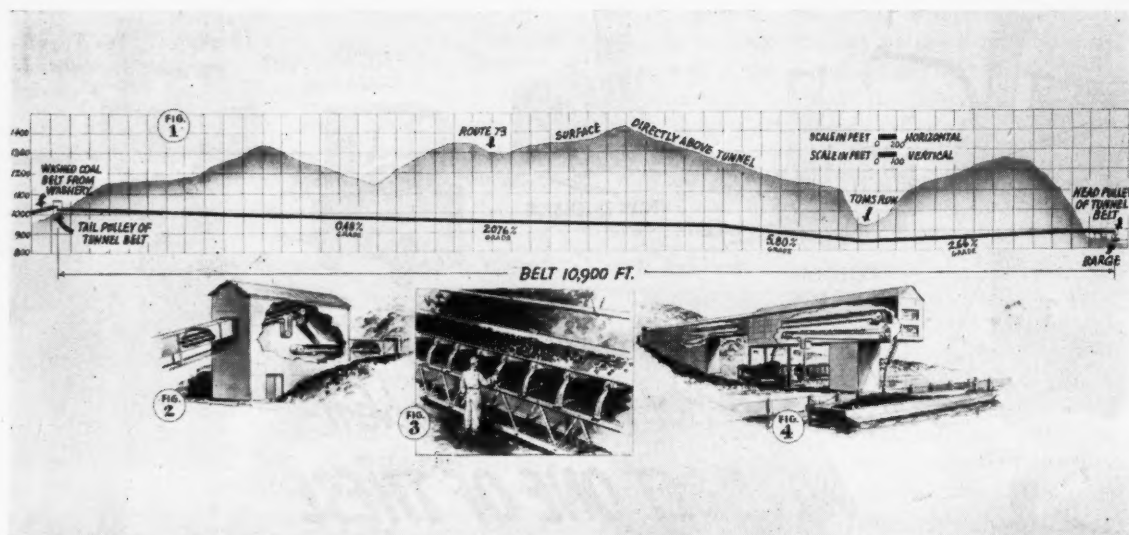
City _____ State _____

Type of materials handled _____



HOW MANY PEOPLE HAVE YOU TALKED TO ABOUT AMERICANISM TODAY?

Circle No. 38 on Reader Service Card for more information
FLOW • SEPTEMBER, 1951



BELT CONVEYORS move coal nearly 11,000 feet from the Weirton Steel mine to the river. Individual pictures are detailed in story.

Bulk Handling Over Long Distances....

Longest Single Unit Conveyor Belt Transports Coal 11,000 Feet

Handling coal over long distances is just another "push-button" job to the Weirton Steel Co. At its mine near Morganstown, W. Va., Weirton transports coal to its mills via an endless rubber, cotton and steel belt. Three hundred tons of coal are moved every hour from the washery, through a 10,900-foot tunnel in an adjacent hill, to a tippie on the Monongehela river. Here coal is loaded into barges for shipment to Weirton.

The drawing above shows the route and operation of the conveyor. Details: Figure 2 shows the transfer house and the tail end of the belt; Figure 3 shows a section of the tunnel through which the con-

veyor passes; Figure 4 shows the general layout of the river tippie and head end of the conveyor.

Coal dumped on the belt at the washery end dumps into a waiting barge on the river just 36 minutes later. A 300 h.p. motor drives the belt. It is believed that this is the world's longest single unit conveyor belt. More than 22,000 ft of belting (30 ins. wide) is used in the system.

Whether your plant handles coal as does Weirton Steel, or some other bulk material, heavy-duty belt conveyors may be the answer to your problem. Where continuous flow is desired, where high volume loads are a must, where speed is essential, equipment of this type may be able to improve your operations, too.

BAKER

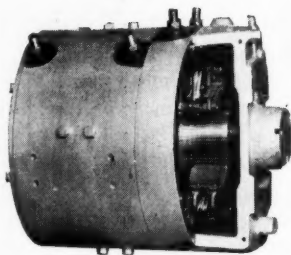
do more

FORK TRUCKS

work per dollar invested



Engineering genius has developed the new Baker line of Fork Trucks for maximum utility, ease and economy of operation, low first cost and minimum maintenance. The electrical and hydraulic components illustrated below are typical of the many built-in features which make this possible.

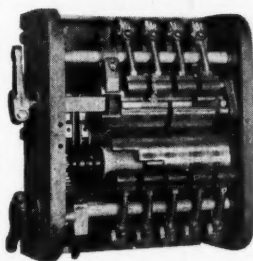


THE MOST EFFICIENT MOTORS FOR INDUSTRIAL TRUCKS

1. Baker designed and built for severe industrial truck service.
2. Cost less to operate because of higher efficiency.
3. Dynamic balanced T-slot armatures wound with rectangular wire for maximum copper in smallest space.
4. Develop highest horsepower for any motors their size and weight because of extra copper.
5. Cool running—can be damaged only by most severe abuse.
6. Heavy forged commutator bars—large brush surfaces for longer life.

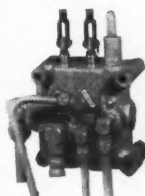
THE SAFEST CONTROLLER FOR INDUSTRIAL TRUCKS

1. Exclusive Baker 2-drum, NoPlug, Electric Dynamic Braking Controller.
2. Engineered for maximum protection to battery, motor, drive axle, truck and operator.
3. In decelerating, truck acts as prime mover, motor as generator, to achieve *Dynamic Braking*.
4. Dynamic braking saves wear on mechanical brakes and provides added safety when descending ramps.
5. Advancing through five steps necessary in accelerating to top speed.
6. Plugging impossible when changing travel direction.
7. Speed selection by foot accelerator for operator convenience.
8. Travel direction selected by lever on dash.



THE PRACTICAL HYDRAULIC SYSTEM FOR INDUSTRIAL TRUCKS

1. Low-pressure hydraulic system—less subject to oil seepage than high pressure systems.
2. Danger of dropping heavy loads effectively reduced.
3. Operator-controlled metering valves give positive control of lifting and lowering.
4. Oil by-passed to reservoir at travel limits for greater safety.
5. Efficient Baker motor, designed for this function, drives the hydraulic pump.
6. Gear-type pump for greatest efficiency.



Yours for the Asking!

Just off the press—16 page picture-story manual "CARE and MAINTENANCE of INDUSTRIAL TRUCKS." Write for your copy today.



BAKER INDUSTRIAL TRUCK DIVISION of The Baker-Raulang Company • 1219 WEST 80th STREET • CLEVELAND 2, OHIO
In Canada—Railway and Power Engineering Corporation, Ltd.

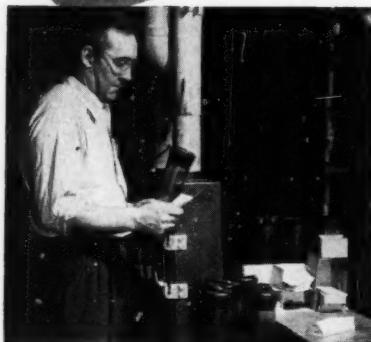
Baker INDUSTRIAL TRUCKS

Circle No. 39 on Reader Service Card for more information

TRANSITUBES

CARRY SMALL PARTS

faster—for less



← ORDER

When an operator is running low on parts, he notifies his job-setter. The job-setter then makes out a requisition and sends it to the main stockroom via Transitubes. In the illustration at the left, the stockroom attendant has just removed one of these orders from the Transitube carrier. The storekeeper . . .

DELIVERY →

. . . now goes to his bins and after selecting the specified parts, returns them via Transitube to the department requesting them. In this illustration, the job-setter has just removed the parts from the carrier. After checking the part number and quantity, he delivers them to the operator. Total time elapsed: five minutes!



. . . at Burroughs

Burroughs Adding Machine Co., Detroit, uses over 70,000 parts to assemble their famous line of business machines. To deliver these parts from the main stockroom to the assembly departments is a big job and an important one. As the illustrations above show, Transitubes are doing it efficiently and economically . . . in some cases cutting delivery time from one hour to five minutes. Further, foot-messengers are available for other jobs and delays in production are reduced to a minimum.

Many industrial companies have found that Transitubes could help them increase efficiency and cut costs through speedy dependable pneumatic tube system of delivery. In these applications Transitubes carry everything from paperwork to sample steel ingots. Why not investigate the possibilities in your operation? Send for the Grover bulletins which tell the complete story.

GROVER



THE GROVER COMPANY

DETROIT 19 • MICHIGAN

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What Every Handling Engineer Should Know . . .

(Continued from page 47)

be further increased by a more intensive training in the specific subject involved.

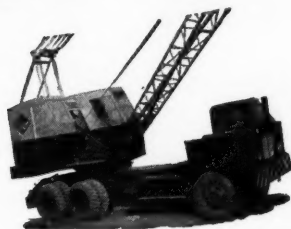
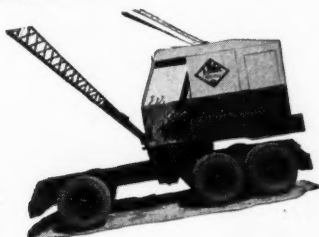
II - The Fundamentals of Materials Handling

The plant layout course included in the curriculum of the industrial engineer is also his introduction to materials handling. The syllabus for this course should place particular emphasis upon the ways in which handling methods affect layout and vice versa. Methods of analyzing flow should also be emphasized.

A materials handling analysis is more than a methods analysis. It employs the same tools and techniques and in addition may require additional information and special forms. In each of the subjects already covered by the industrial engineer above, there are special adaptations to the materials handling problem. The materials handling engineer must be able to discuss the accounting aspects of a proposed method. How will the tax, for example, on corporation profits affect the final net savings of a method requiring a high capital investment?

There are certain characteristics inherent in each type of materials movement. It is essential to have a knowledge of the methods and equipment by which intermittent or continuous movement may be effected. Vertical movement of either type also poses certain problems.

The cost of handling and moving materials in a plant is strongly influenced by the way in which the handling function is incorporated into the organization. Handling systems may solve a production control problem; will most definitely affect existing control methods. Special problems of training, maintenance of equipment and safety as applied to materials handling are the concern of the industrial engineer and as



1 CRAWLER TYPE

- Available in capacities up to 110 Tons
- Travel speed up to 1 M.P.H.
- Requires one operator
- All major operations controlled by air (excluding Type 34)
- Steers from the cab

2 WHEEL TYPE

- Types 34 and 604 available with wheel mounting.
- One engine powers all operations, including travel
- One operator controls all operations from cab
- Rotating assemblies have same basic features as corresponding crawler machines

3 TRUCK TYPE

- Mounted on 10-wheel truck carrier
- Powered by two engines
- Requires two operators
- Can travel up to 31 M.P.H.
- Available only with Type 34 rotating assembly

3 Ways to faster-more efficient Crane Service

LIMA Shovels, Cranes and Draglines are built in the following capacities—Shovels $\frac{3}{4}$ to 6 yards, cranes to 110 tons and draglines, variable. Rubber-mounted Truck Cranes in 20 and 35 ton capacities.

CRANES—Crawler mounted - truck mounted - wheel mounted - Baldwin-Lima-Hamilton builds them all and in sizes that will best meet your requirements. When mounted on rubber they are available in capacities up to 35 tons. They will go anywhere you can drive a truck and at speeds up to 31 M. P. H.

For work where mobility is not an important factor, LIMA crawler mounted cranes can be furnished in capacities up to 110 tons. To increase their range of usefulness a variety of attachments are available: shovel, dragline, clamshell, pullshovel and pile driver. Each attachment is interchangeable. For faster, more efficient crane service buy the crane that is first in quality—first in safety and reliability—BUY LIMA.

It will pay you to consult your nearest LIMA Sales Office or Representative before you buy your next shovel, crane or dragline. Offices in principal cities of the world.

**BALDWIN-LIMA-HAMILTON
CORPORATION**

LIMA-HAMILTON DIVISION

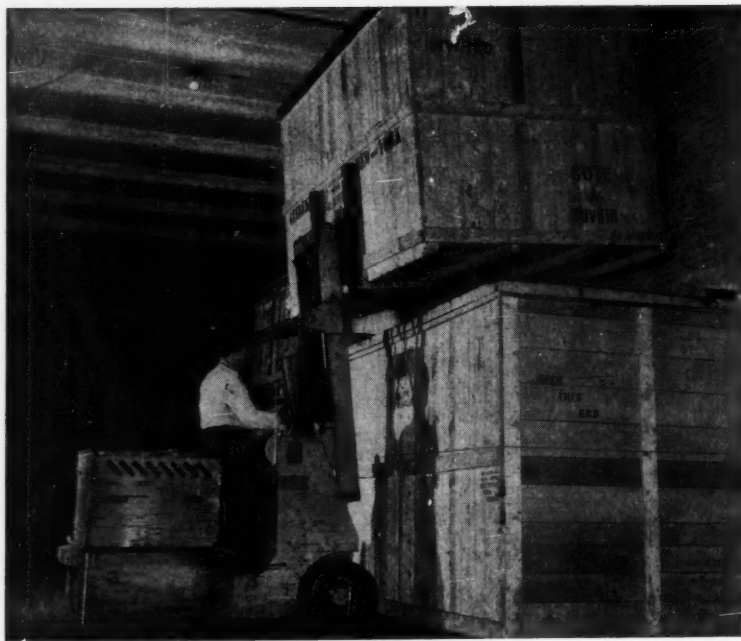
LIMA, OHIO, U. S. A.

LIMA

CRANES • • • SHOVELS • • • DRAGLINES

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FLOW • SEPTEMBER, 1951



It's a Hard Worker!

Battery industrial trucks such as this husky are the wheel horses of modern material handling systems. They do their heavy work anywhere from 8 to 24 hours a day... week after week, year after year... with little or no complaint. That's dependability!

The surest way to get full value out of these hard-working, revenue-producing trucks is to equip them with rugged, unfailing batteries... the kind that stay on the job, out of the repair shop. Which is another way of saying, "You'll do a better job cheaper with EDISON Storage Batteries."

Edison cells were designed for hard work. They're built of steel inside and out, and their electrolyte preserves the steel. The steel-sheathed active materials can't shed. Edison batteries can't be injured by accidental short-circuiting or reverse charging... or by standing idle during shutdowns... or even by freezing.

Initially, Edison batteries cost a little more. But when you rate them in terms of years worked, tons handled and down-time saved, you'll agree that they're the best investment you can make. Ask any user!

Write for free booklet SB 2039. Edison Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, N. J. In Canada, International Equipment Company, Ltd., Montreal and Toronto.

EDISON



**Nickel • Iron • Alkaline
STORAGE BATTERIES**

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often directly that of management itself.

The understanding of the nature of materials handling and its place in production requires the mastery of the following subjects:

- (1) This is the outline of a book written by the author of this article and due to be published later this year.

A. Introduction

1. Introduction and history
2. History
3. Principles

B. Motion and Time Study

4. Work simplification
5. Methods of showing flow
6. Time study and standard times

C. Use of Equipment for the Movement of Materials

7. Factors in selection of equipment
8. Horizontal fixed routes
9. Overhead movement of materials
10. Vertical movement of materials
11. Horizontal movement of materials—non-fixed path
12. Industrial storage facilities

D. Containing and Packaging of Materials

13. Shipping containers for product protection
14. Packaging methods and materials
15. Research in packaging and materials handling

E. Materials Handling Analysis

16. How to solve a handling problem
17. Methods of analysis
18. Type of surveys
19. Cost accounting systems
20. Determination of handling costs
21. How to sell better handling methods

F. Organization for Materials Handling

22. Organization
23. Production control for material handling
24. Operator training and instruction

- 25. Integration of equipment
- 26. Maintenance
- 27. Safety

G. Special Handling Problems

- 28. Handling for machine operations
- 29. Warehousing activities
- 30. Handling for assembly
- 31. Air cargo handling
- 32. Railroad and truck handling
- 33. Ship and barge handling
- 34. Handling bulk materials

The above are the aspects of materials handling which every industrial engineer should know and with which every production manager should be acquainted. At the same time they form the basic understanding of the subject which every materials handling engineer should have before he undertakes the solution of any major handling problem.

III - Materials Handling Equipment

The materials handling engineer should have a thorough knowledge and understanding of the possible ways to move materials in the direction, quantity and manner required. This requires a knowledge of the existing types of equipment and an active imagination in case these are not adequate for the problem at hand. The more difficult handling problems always force a return to basic handling principles for their solution; they cannot be overlooked at any time.

In order to provide him with a working background of existing types of materials handling equipment it is necessary to adopt a standardized form of presentation. This should include for each type:

- a. main sub-divisions, and applications of each;
- b. equipment details;
- c. design characteristics and problems; and
- d. installation-problems in estimating and survey of requirements.

This section provides the basis of the training for a materials

Prevent delays . . . cut operational costs

LAMSON TUBES

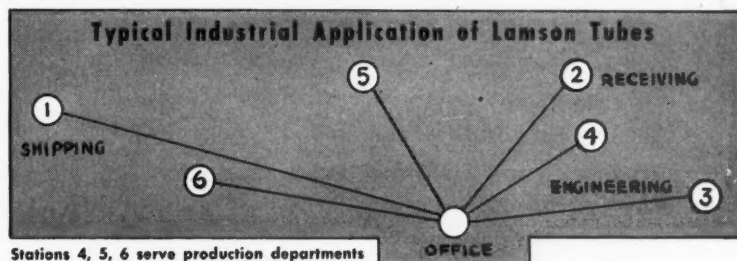
Rush paperwork,
small tools & parts
ANYPLACE
...in Seconds!

AIR MAIL  within your plant

LAMSON TUBES save thousands of time-consuming, money-wasting delays—cut operating costs.

They *flash* orders from office to shipping—whisk purchase orders, job tickets, time tickets, mail, etc., between departments . . . between floors . . . between buildings. Even small tools, gauges and small parts are speedily delivered at 30 feet a second.

Lamson Tubes quickly pay their way. In one plant alone, a Lamson system costing only \$3300 saves \$1300 a month!



Swift tube communication between stations is provided through the central tube desk in office.

FREE BOOKLET

Send for "Wasted Steps"—shows how Tubes can save you money. LAMSON CORPORATION, 1300 Lamson St., Syracuse 1, N. Y. Offices in principal cities.



Circle No. 43 on Reader Service Card for more information



Floor Savings! Load Savings! Maintenance Savings!

- ★ **Carries your loads** without damage to floors
- ★ **Rides your loads** without shift or breakage
- ★ **Protects your equipment** and reduces your maintenance costs
- ★ **Saves you money** every foot of the way
- ★ **It's the solid** with the velvet touch—the solid with the longest wearing qualities
- ★ **Factory trials** result in 100% use
- ★ **Big warehouses** everywhere save their floors while their loads ride in security!

SWITCH TO THE U. S. ROYAL INNACUSH

- | | |
|--------------------------|-----------------------|
| ● PROTECT YOUR EQUIPMENT | ● PROTECT YOUR FLOORS |
| ● PROTECT YOUR LOADS | ● SAVE YOUR MONEY |

the great new Soft-Riding Solid

UNITED STATES RUBBER COMPANY

Circle No. 44 on Reader Service Card for more information

handling engineer. The detailed knowledge of each type is an important part of his equipment and a necessary part if he is to be able to select objectively the most efficient method of handling for a specific problem. The complete mastery of the details outlined herein will take a number of years. The following outline will provide a basic text for this study.

A. *Conveyors*

1. Belt conveyors
2. Elevator conveyors
3. Chain conveyors
4. Roller conveyors
5. Overhead types
6. Enclosed conveying units
7. Portable and other fixed path conveyances

B. *Hoists and cranes*

8. Hoists and hoisting gear
9. Bracket and pillar cranes
10. Revolving cranes
11. Overhead traveling cranes
12. Other type cranes and accessories
13. Other elevating devices (except portable elevators)

C. *Industrial trucks*

14. Hand trucks, dollies, trailers, fixed-track rolling stock
15. Power for industrial trucks
16. Powered industrial trucks
17. Tier machines (portable elevators)
18. Accessories and equipment

D. *Industrial Storage Facilities*

19. Skids and platforms
20. Pallets
21. Industrial containers
22. Racks, frames, bins and shelves

E. *Shipping Containers*

23. Metal, wood and fibreboard
24. Corrosion prevention and fastening methods

F. *Packaging Materials*

25. Product containers and sealing devices
26. Packaging materials and machinery

G. *Considerations of the Physical Plant*

27. Floor surfaces and structures
28. Superstructure and relation to equipment

In addition to the numerous texts available on individual types or groups of equipment, the catalogues of the equipment manufacturers themselves will often be found to be a valuable source of this specialized information. Articles from a variety of technical magazines are another invaluable source.

The materials handling engineer, then, has the following qualifications:

1. He is a qualified industrial engineer with an understanding of production processes and methods.
2. He has an understanding of the fundamentals of materials handling along with a specialized knowledge of the adaptation of engineering and business aspects of handling methods.
3. He has a wide knowledge of types of materials handling equipment, and is familiar with the construction, operation, installation and maintenance of each type.
4. He is able to prepare engineering cost estimates on the existing method and on proposed methods. This includes equipment estimates and operating or handling costs under each method.

"PLEASE SEND ME A NEW FLOW DIRECTORY WHEN IT COMES OFF THE PRESS" . . . "HERE IS MY ORDER FOR A NEW FLOW DIRECTORY" . . . "I'D APPRECIATE MORE DETAILS ON THE 1952-53 FLOW DIRECTORY" . . . these are only a few of the requests that reach us each day for the forthcoming, revitalized **FLOW DIRECTORY OF MATERIALS HANDLING EQUIPMENT, MACHINERY AND ACCESSORIES.** If you have not ordered your copy yet, or if you want more information, see page 128 in this issue and use the handy card opposite this page.



Buschman portable Press-Vator

In-between-operation-handling is a thing of the past on this modernized production line at Toledo Stamping & Manufacturing Company. A battery of sixteen BUSCHMAN Portable PRESS-VATORS deliver parts from one press to the next automatically.

As a result, production has been greatly speeded, storage of in-process materials eliminated, floor space saved, accident hazards reduced, intermixing and spoilage of parts curtailed, and general housekeeping vastly improved.

Originally designed as a companion production unit to high speed presses, PRESS-VATORS are finding increasingly greater use in conjunction with all types of high speed production equipment.

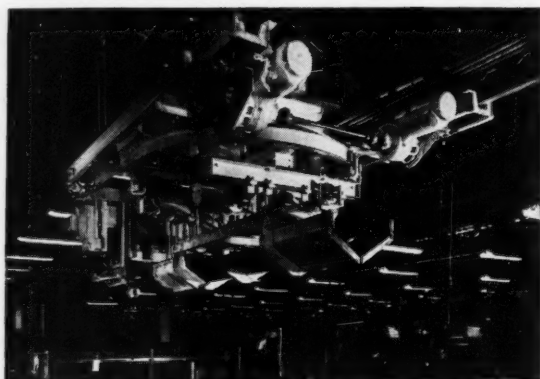
Write today for descriptive literature.

THE E. W. BUSCHMAN CO., INC.
4450 CLIFTON AVE.
CINCINNATI 32, OHIO

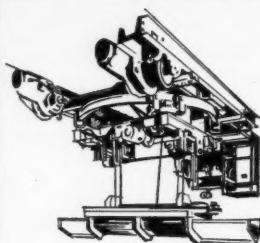


Circle No. 45 on Reader Service Card for more information

INCREASES FLOOR CAPACITY 50%



**OVERHEAD MONORAIL
SYSTEM PERMITS
INSTALLATION OF 50%
MORE SCREW MACHINES
—WITHOUT EXTRA
BUILDING**



A large manufacturer of farm implements solved "expansion pains" in the automatic machine department by installing a Louden Monorail System to handle bar stock.

In addition to increasing by 50% the number of machines in the same floor area, the labor force in this department was cut from 9 men to three men.

"Down time" from shortage of raw stock has been virtually eliminated, since the carrier cab is in continuous telephone contact with a dispatcher, who directs the supply of bars to machines.

All functions are motor driven and controlled from the cab. The hoist can be rotated 90° to permit accurate positioning of the stock in the machine racks.



FREE ILLUSTRATED BOOK

Case histories telling how Louden Monorail Systems have saved time and money for widely different kinds of industries are described and pictured in a new book called, "Economical Material Handling". Write for your copy.

THE LOUDEN MACHINERY COMPANY
5111 S. Court St., Fairfield, Iowa

Louden

OVERHEAD MATERIAL HANDLING
Circle No. 46 on Reader Service Card for more information

It's Easy To Sell Handling...

(Continued from page 62)

"We have always felt that at least two people should be completely familiar with the recommended practices in order that we might be in position to answer any questions directed at them by other members of management present in the meeting where our requests are to be considered."

R. F. Ahrens, Vice President, United Airlines Says: "We're Constantly Striving For New Methods, Equipment. . . ."

United Air Lines' use of material handling methods and equipment dates back some 10 or 15 years. Use of such equipment as fork trucks in connection with both UAL property and air cargo was prompted by safety to personnel and protection of equipment."

"United has maintained a very strong position in its competitive field by virtue of its ability to handle its own equipment and that of the passenger or shipper in a safe and efficient manner. Our company does not feel that a completely satisfactory solution to its material handling problems has been found, and is constantly seeking out new methods and equipment to do the job better."



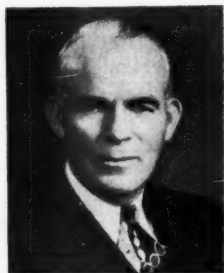
R. F. Ahrens

W. J. Delahanty, General Manager of Manufacturing, Burroughs Adding Machine Co. Says: "Our Management Asked For Employee Suggestions. . . ."

Our management was convinced that it was possible to speed the work by raising the efficiency of our methods and by the use of more timesaving equipment and asked for recommendations from the heads of our operating units here in the company's main plant."

"Many of the recommendations made by plant supervision concerned the adoption of material handling equipment and methods which would minimize handling costs and save floor space."

"No recommendations were made simply for the sake of a change. They were made by men with long experience in the operations involved, and after a thorough weighing of the benefits to be gained. The installations we have made since the war have given the company a combined savings of some 42% in handling time and made former storage space available for production."



W. J. Delahanty

UNUSUAL

SALE*

Used CHAIN CONVEYORS In Top Condition

Railway Express Agency offers for sale overhead tow chain trolley conveyors, together with "I" beam track, roller turns, caterpillar drives, starters and electric motors. Conveyors were used to tow platform trailers, not as load carriers. Consequently, most trackage is in excellent shape. Caterpillar drives and motors have never been subject to over-load strain.

Chains are all No. 458, heat treated, rivetless chains, supported on ball bearing trolleys usually spaced at not more than 32". Tracks are 4", 7.7 lbs. high carbon "I" beams and turns are hardened face ball bearing rollers set in frames of 10' to 16' radius.

This sale results from changes in Railway Express handling methods and character of shipments requiring substitution of other types of equipment at the following Express Terminals:

*Long Island City: Pennsylvania Express Terminal, 39th St. and Northern Boulevard. In place, two separate chains with 208V, 3 phase, 60 cycle motors. Chain "A" is 2060' long with three 20 HP motors and 3 caterpillar drives. Chain "B" is 1833' long with three 20 HP motors and 3 caterpillar drives. Installed by Mechanical Handling Systems, Inc.

*New York City: West Side Terminal, 10th Avenue and 33rd St. In place, chain 2520' long, with three 20 HP, 220V, 3 phase, 60 cycle motors and 3 caterpillar drives. Installed by Mechanical Handling Systems, Inc.

Los Angeles: Express Terminal in Union Passenger Terminal. In place, chain 722' long, driven by one 15 HP, 440V, 3 phase, 60 cycle motor, with caterpillar drive. Installed by Jervis B. Webb Co.

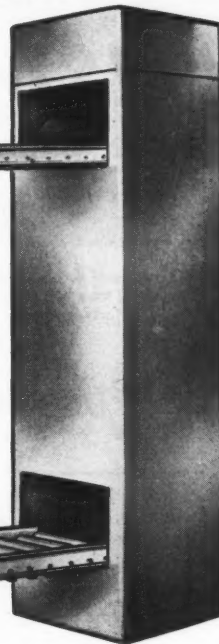
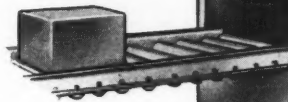
*Jersey City, N. J.: Garage at 168 York St. In storage, one caterpillar drive of 10 HP capacity and one 10 HP, 220V, 3 phase, 60 cycle motor in need of repairs. Installed by Jervis B. Webb Co.

When operations ceased, all conveyors were in excellent working condition. Now offered for sale separately or by parts, as is, and where is. May be readily inspected. Purchaser can take prompt delivery. Offers should be submitted to General Purchasing Agent, M. L. Tynan, 218 E. 44th St., New York City.

Reciprocating Lift

New! Flexible!
Saves Space!

Now speed material flow from floor to floor in minimum space. Load and unload on same side or on opposite sides. Two units allow passage through your conveyor line or permit clearance of obstacles. Automatic or manual control. Limit switches and automatic spacing devices assure trouble-free operation. May we show you how our standardized reciprocating lifts can be applied to your particular requirements. Write today!

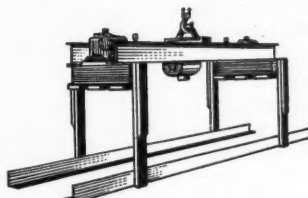


CONVEYOR SPECIALTY COMPANY, INC.

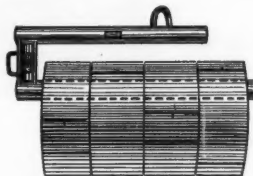
36 Newport Avenue, North Quincy 71, Mass.

Belt Conveyors • Slat Conveyors • Gravity Conveyors • Press Conveyors • "Unitable"
Belt Conveyor • Unipac Handler (Portable Piler) • Complete Package Handling Systems

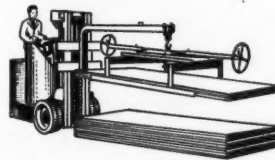
MANSAYER GRABS for the Steel Industry



STYLE 1142—Adaptable to all types of loads. Ideal for sheet stock. Hand or motor operated. Motor operation suggested for heavy loads. Special design permits use in low headroom areas.



STYLE 1274S—For wire and coil stock. Simple to operate. Available in alloy steel for pickle tubs, etc. Smaller grab for single coils for machine loading.



STYLE 1142—Mansayer Grabs of this type can be used with boom equipped trucks, as well as overhead cranes. Swivel hook permits bundles to be piled to advantage in box cars.

Watch future ads for additional Mansayer Grabs for this and other industries

MANSAYER INDUSTRIES 3103 EAST ST., NEW HAVEN CONN.



IF YOU'RE NOT USING "FIST-GRIP" CLIPS

YOU'RE ASKING FOR TROUBLE!

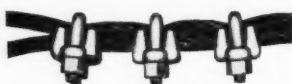
Here's Proof!

WRONG and RISKY!

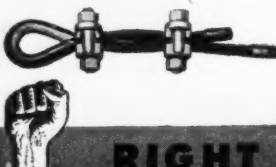
Tightening of nuts on ordinary U-bolt clips pulls wire rope into bowed shape, crushes rope, endangers safety.



In use, rope between U-bolt clips is crimped under tension, leading to further damage and early breakage.



Laughlin "Fist-Grip" Safety Clips grip the rope in four bearing-surfaces, holding it straight without damage or distortion.



Keeping the rope straight under working tension, "Fist-Grip" Clips deliver 95% to 100% of the rope's rated breaking strength.



RIGHT and SAFE!

You Get All These Benefits Only With "FIST-GRIP" Clips

Won't crimp or crush—pre-formed or regular lay wire rope; leaves them full strength for safety and longer life.

Simple, easy to put on—saves time, manpower; can be put on with any type wrench.

100% foolproof—can't be put on backward.

Sure grip—two clips do the work of three.

Extra strength and safety—only type of clip where entire clip, including bolts, is drop-forged.

Distributed through mine, mill and oil field supply houses.

Get This Valuable FREE Data-Book

Use the coupon below for Laughlin Catalog-Data Book, telling how to select the right wire rope or chain fitting for every job.



**SEND IN
TODAY**
... no cost or
obligation

THE THOMAS LAUGHLIN CO.
29 Fore St., Portland 6, Maine

Please send Catalog-Data Book #150 to:

Name..... Position.....
Company.....
Street.....
City..... Zone..... State.....

LAUGHLIN

THE MOST COMPLETE LINE OF DROP-FORGED WIRE ROPE AND CHAIN FITTINGS



Circle No. 50 on Reader Service Card for more information

Literature Available From Advertisers

Continued from page 33

You can travel cross country at speeds up to 35 mph. in a Schield Bantam 5-ton crane. Handles a 50 ft. boom, 29 in. magnet. Schield Bantam's catalog shows what the truck-mounted crane can do.

Circle No. 53 on Reader Service Card

If you haven't heard the story of Fibreen Unitized Loading, Sisalkraft Company will be glad to tell it again. New Sisalkraft literature shows how the Fibreen loading idea works.

Circle No. 67 on Reader Service Card

The time you save on turns adds up to 50% more yardage, using Service Supply Corporation's Lodover. The Lodover is a combination overhead and front-end loader. Service Supply booklet tells about it.

Circle No. 78 on Reader Service Card

Quality made hardwood pallets are the L & H Wood Company's specialty. L & H literature shows some of the other wood products (pallet boxes, skids, crates) L & H makes.

Circle No. 118 on Reader Service Card

Gripper woven wire slings simplify any lifting job, according to the Cambridge Wire Cloth Company. Cambridge's Technical Data File gives you all the dope on these slings.

Circle No. 104 on Reader Service Card

Colson Corporation's Lift-Jack system lets one man do the work of two, Colson says. A new 56-page catalog shows how the system works, gives you a look at other Colson equipment.

Circle No. 131 on Reader Service Card

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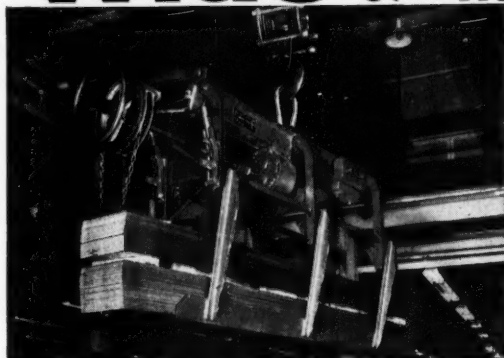
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Wide or Narrow...



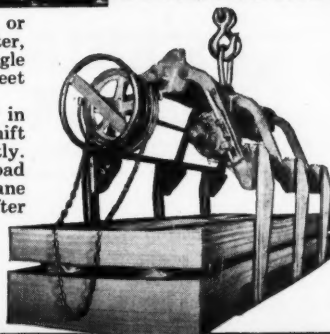
**1 C-F
LIFTER
HANDLES
THEM ALL**

Whether your production requires a few or many widths of sheet steel, 1 C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.

Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other method, a C-F Lifter will soon pay for itself.

Bulletin SL-25 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There's no obligation.



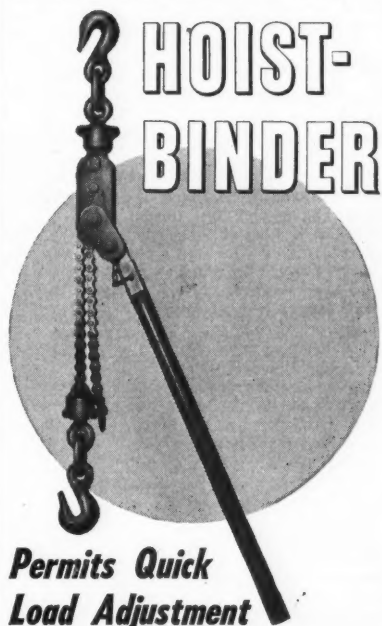
CULLEN-FRIESTEDT CO.

1320 South Kilbourn Avenue • Chicago 23, Illinois

Circle No. 51 on Reader Service Card for more information

FLOW • SEPTEMBER, 1951

NEW RATCHET-TYPE HOIST-BINDER



**Permits Quick
Load Adjustment
... Continuous Take-Up**

Your load is never "off the hook" when you boom it with a new Coffing Hoist-Binder. Operating on the ratchet hoist principle, the Hoist-Binder pulls load chain to any tension up to 3,000 lb. Takes up or slacks off 20½ in. (or more with longer chain) ... provides ample length of pull to tighten down springy loads or re-secure those that have settled — without releasing hooks for another bite.

Entire operation — tightening and releasing — is controlled by the handle alone. No buttons to push, no levers to turn. Handle is removable, and when removed, binder becomes a tamper-proof lock. Ratchet and pawl construction holds securely in any position ... prevents handle from flying up when released ... permits full strokes for rapid take-up, half strokes for minute adjustment ... free chains when not under load. The handle acts as a "safety valve," since it will bend before the binder is overloaded beyond safe limits.

Find out more about the binder that gives you extra convenience and safety.

Write for Bulletin FL9HB.

COFFING HOIST
Company

DANVILLE, ILLINOIS

Quick-Lift Electric Hoists • Hoist-A-alls

Safety-Pull Ratchet Lever Hoists

Mighty-Midget Pullers • Spur-Geared Hoists

Differential Chain Hoists • I-Beam Trolleys

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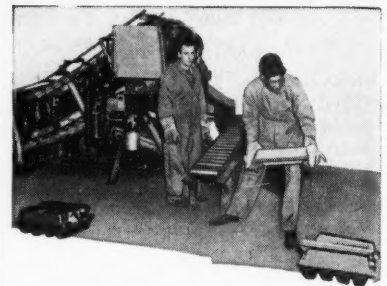
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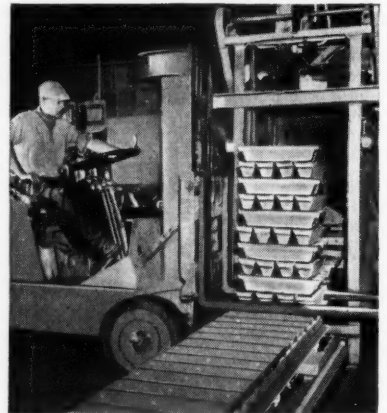
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Stacking these "Pigs" was a slow, back-breaking job until this Allied Stacker "took over"



Automatically stacked, 10 high in alternated rows, 950 pounds of Pig Lead are ready for removal in a matter of minutes, without the use of pallets.

A slow, time-consuming job that required two men at a time, alternating with two others because of the terrific heat and strenuous work involved, has been eliminated by the Allied Pig Stacker.

The pigs, cast on a conveyor, are now carried to a position under the Stacker. Four pigs, automatically picked up, moved forward and set on the Stacker Conveyor, become the bottom row of a "stack". The next incoming four pigs, picked up, but turned 90 degrees, moved forward and deposited on the first row, all automatically, become the second row. When ten rows are completed, the "stack" is moved forward by the conveyor and a fork truck takes them away.

The Pig Stacker is another highly-engineered, fully automatic, material handling device developed, built and installed by Allied.

ALLIED

STEEL and CONVEYORS, INC.
17361 Healy, Detroit 12, Mich.



Complete Conveyor Systems
Designed • Fabricated • Erected

Circle No. 54 on Reader Service Card
SEPTEMBER, 1951 • FLOW

\$5520⁰⁰ pays DIVIDENDS FAST!

F. O. B. Waverly, Ia.
(less truck)

- Lifts up to **10,000 lbs.**
- Mounts on new or used truck
- Drives anywhere, any-time... without hauling delays
- Fast, mobile, rugged
- Easily converted to dragline, clam, pile driver, trench hoe or shovel

NEW low-cost Bantam* crane, with 5-ton lifting capacity on rubber tires, easily handles hundreds of industrial jobs at big saving in time and labor. Travels anywhere around plants, yards, or cross country at speeds to 35 m.p.h. Unloads railroad cars, trucks... stockpiles materials... spots steel... loads coal, scrap, pipe, logs, etc. Handles 50' boom... 29" magnet... 6 versatile digging and lifting attachments. Backed by nationwide distributor service. Write for complete details. *Reg. U. S. Pat. Off.

SCHIELD BANTAM

CRANES • EXCAVATORS

SCHIELD BANTAM CO.
251 Park St., Waverly, Iowa

Send details on truck-mounted Bantam ☐ Crane ☐ Excavator

Name _____ Title _____

Address _____

City _____ State _____

Company _____

Costs less... Travels 35 M.P.H.... Gets more jobs done



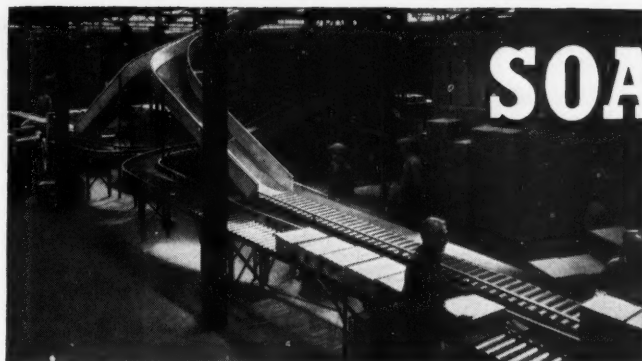
GEORGE G. RAYMOND SR., president (right), with son **George G. Raymond Jr.,** executive vice president.

Lyon-Raymond Corp. Gets New Name

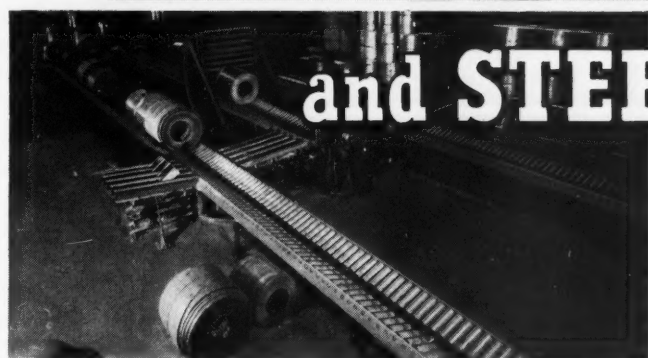
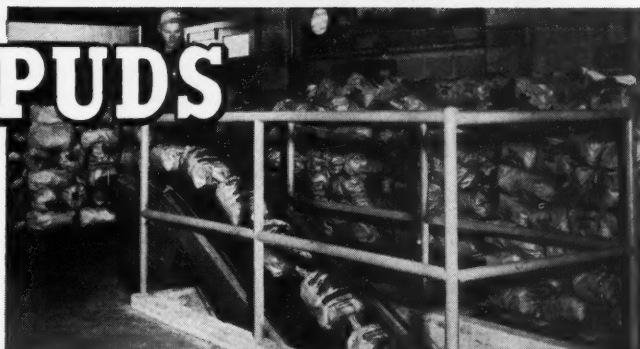
The 111-year old LYON-Raymond Corp., manufacturers of electric industrial trucks and hydraulic elevating equipment, will be known as The Raymond Corp. after September 1, 1951, according to George G. Raymond, Sr., president and George G. Raymond, Jr., executive vice president of the Greene, N. Y., firm.

The name change was made "because the name LYON has no connection with the present company management and because it has, on occasion, caused some confusion with other similarly-named manufacturers."

The Raymond Corp. originally was founded in 1840 as the Lyon Iron Works and was operated for 82 years by three generations of the Lyon family. In 1922, with the advent of Raymond family management, the firm turned its attention to the material handling field which was then in its infancy. Initial units included floor trucks, truck casters and skid platforms for use in conjunction with lift trucks.



SPUDS



Whatever you make or handle, Standard Conveyors speed operations... save time and costs...

Cartons of soap—bags of potatoes—coils of sheet steel, weighing several tons—Standard Conveyors are built to handle them all—smoothly—at lowest cost.

Whatever you make or handle in your business Standard Conveyor, with an experience record of more than 45 years, has the "know-how" to assist you to use conveying equipment to best advantage. Write—

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul, Minnesota
Sales and Service in Principal Cities



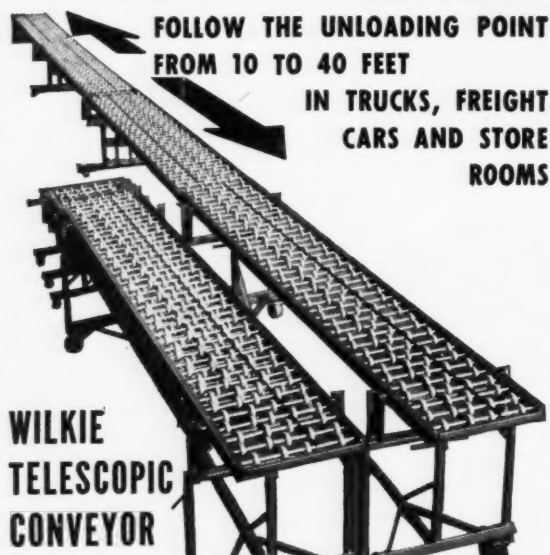
Write to Dept. "1-9" for valuable reference book "Conveyors by Standard" and tell us what you want to convey.

ROLLER • BELT • SLAT • CHAIN • WHEEL
PUSH-BAR • SECTIONAL

PORTABLE CONVEYOR UNITS:
HANDIBELT • HANDIPILER
INCLINEBELT • LEVEL BELT • EXTENDOVEYOR
UTILITY BELT-VEYOR • HANDI-DRIVE
CONVEYORS VERTICAL LIFTS • PNEUMATIC TUBE SYSTEMS

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WILKIE TELESCOPIC CONVEYOR

Across the platform into the trucks or reverse—inside freight cars—to or from permanent conveyors.

Maneuverable with no ad-

justing, no set up, Wilkie Telescopic Conveyors are now widely used. Could a "WILKIE ON HAND" increase efficiency for you?



WRITE TODAY FOR COMPLETE DATA

THE WILKIE CO.,

5520 ARCH STREET, PHILADELPHIA 39, PA.

IN CANADA: DOMINION EQUIPMENT CO. 5929 DECARIE BLVD., MONTREAL

Speed up INPLANT HANDLING



Clamp jaws hold boxes firmly in place. Clamps are opened for release and closed for gripping with a convenient foot pedal. Rugged construction; ball-bearing, rubber-tired wheels. Models for all purposes. Illustration shows Universal model with tilting frame. For bulletins address Dept. H.

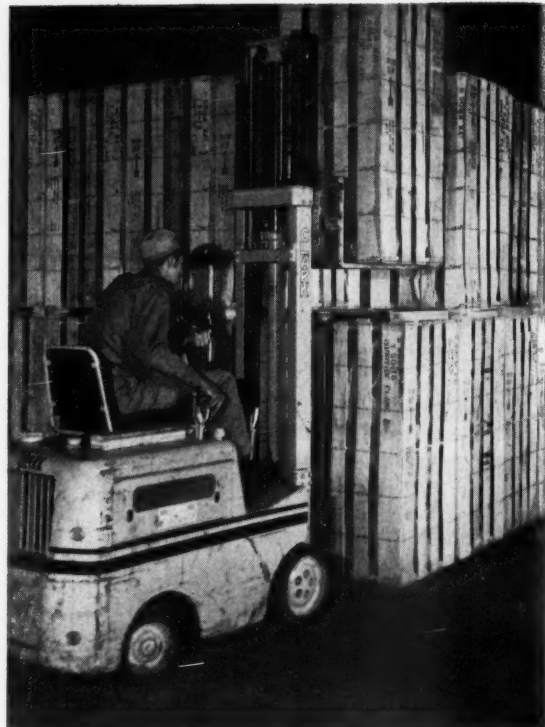
fmc
CLAMP
TRUCKS

FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION
Riverside, California • McAllen, Texas

NM-8



Circle No. 56 on Reader Service Card for more information
78



STACKING CRATES is the job of this 2000-lb. fork truck. Truck has doubled warehouse space by double-decking crates.

(Continued from page 59)

able. The usual linear flow was not possible in the comparatively narrow space. To obtain optimum usage from the space the material flow had to be reversed at various points.

The revamped assembly department is in the center of the building on the ground floor. While the flow has been cut up into segments which adjoin each other at right angles, the flow has remained progressive. One segment of this production is made up of break press, roll, seam, crimping and degreasing operations. From the degreaser the jackets are hung on the overhead chain type conveyor, which carries the shells through the electrostatic paint booth and the infra-red oven. The jackets travel on this closed circuit to return near the hang-on point.

Air Hoist, Pit, Rotary Bin

While the rectangular flow pattern leaves areas free between the segments of the line, these spaces are effectively used for sub-assembly, zone storage as well as service functions in relation to the unit being produced.

At the start of the assembly line the painted jackets are stored with the inner jackets. An air hoist at this location serves as an important assembly tool. The fiber glass insulation is placed around the inner jacket with a "shoe horn" device while in a horizontal



AIR LIFT raises heaters from assembly room floor level to warehouse level on an independent conveyor section.

position. The assembly is raised to a vertical position at the bench, and the shoe horn is then pulled out by means of the hoist. The hoist then lowers the tank into the jacket assembly, whereupon, it places the latter on a wooden pallet. The heater travels on this pallet through assembly, which later becomes the crate base.

In order to avoid lifting and lowering of the fairly tall heater, the new assembly line was constructed with a pit. Up to the pit (about 30 ft.) various assembly operations can be done conveniently at floor level. As the heaters arrive at the pit, they travel on a 24"x40' belt, and the pit places the operators at waist height in relation to the belt. Each operator has the parts he needs directly at his side. The belt usually operates at about five FPM.

Air Lift, Fork Truck

From the belt conveyor the completed assembly is discharged on a roller conveyor, on which the crating is performed. Prepared crating is used, a product which has saved time and space as compared with the home-made crates which were used previously. After a paper sleeve has been slipped over the finished assembly for dust protection, the prepared crate is simply "wrapped around" the unit.

But the destination of most of the completed heat-

Circle No. 57 on Reader Service Card for more information

Save time! Prevent accidents!

LIFT AND DUMP MECHANICALLY

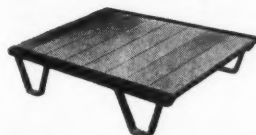
**BAGS
BARRELS
DRUMS
BOXES**

REDUCE HANDLING COSTS with a CESCO Dumper. It handles up to 100 loads per hour; has a lifting cap. ranging from 100 to 1500 lbs. Both single- and multi-purpose portable models are built in standard dumping heights from 5 to 12 ft. Stationary models up to 16 ft. dumping heights. Push button controlled. Write for catalog.

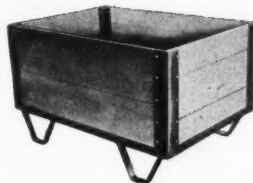
COLSON EQUIPMENT & SUPPLY CO.
1317 Willow Street • Los Angeles 13, California



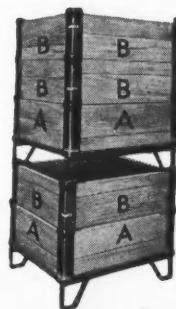
In production or in storage IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY



Standard 2-way entry bolted type skid built to handle loads up to 5 tons.



Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.



Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

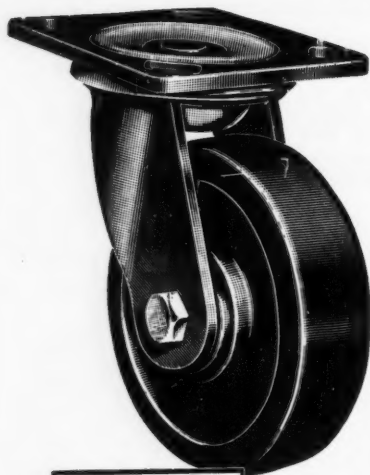
Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

IRONBOUND
EQUIPMENT DIVISION

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
30 HOFFMAN PLACE • HILLSIDE, N. J.

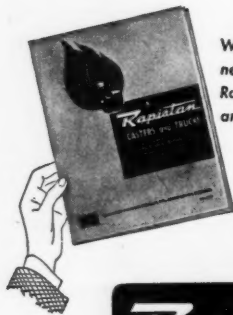
MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

Circle No. 58 on Reader Service Card for more information



**Silver-dollar
Raceways**

Rapistan Cold-Forged caster raceways are shaped by high-pressure coining, like silver dollars, then case hardened. That means the hardest surface in caster ball raceways! You get heavily-sectioned all-steel parts at prices usually associated with pressed steel or cast iron casters. They last longer yet cost you less. Available in 3 series . . . serving a variety of applications. In wheel sizes from 3 1/4" to 8".



Write today for
new free catalog of
Rapistan Casters
and Trucks.



The RAPIDS-STANDARD COMPANY, Inc.
558 Rapistan Bldg., Grand Rapids, Mich.
Circle No. 59 on Reader Service Card

80

ers is directly south of this point to the warehouse. So it is necessary to reverse the flow in order to shunt the products at the desired location. The column spacing does not allow for a wide traffic artery. This problem was solved by a roller conveyor laid on the floor, which extends south for about 75 ft. A gate section in the line can be raised to allow for cross traffic.

The warehouse floor is 21 ins. higher than the assembly room floor. To raise the heaters to the higher level, an independent section of conveyor was placed on an air lift, which is operated from an overhead switch. In a raised position, this conveyor section lines up on a level with the warehouse conveyor.

The latter extends about 20 ft. into this building. A 2,000 lb. capacity fork truck picks the crated heaters off the line and stacks them two high. The fork truck has enabled us to double our warehouse capacity by double decking the finished units, which were formerly stored single deck.

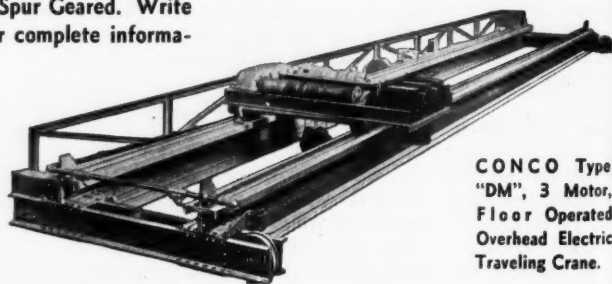
The revamped assembly line cured the ills that had existed, besides effectuating the considerable production increase mentioned earlier. The reduction in floor-to-floor traffic—in-process parts going up and finished products coming down—made the elevators available for normal inter-floor traffic needs. By special arrangement of the assembly line lifting and lowering of the heater during this operation has been made unnecessary. Finally the operation was successfully fitted in a space of about 7,000 sq. ft.

Take advantage of the special pre-publication price of only \$5.00 for the new FLOW DIRECTORY. See page 128 in this issue for more details.



OVERHEAD ELECTRIC TRAVELING CRANES

The answer to a wide variety of materials handling problems, the CONCO line includes SINGLE GIRDER CRANES, Underhung and Top Running, Hand Geared and Electric—DOUBLE GIRDER CRANES, Hand Geared and Electric in capacities up to 25 tons—JIB CRANES, Mast Type, Self-Supporting type—I-BEAM TROLLEYS—HAND CHAIN HOISTS, Differential and Spur Geared. Write today for complete information.



CONCO Type
"DM", 3 Motor,
Floor Operated
Overhead Electric
Traveling Crane.

CONCO ENGINEERING WORKS,

Division of H. D. Conkey & Co., 38 Grove St., Mendota, Illinois
Circle No. 60 on Reader Service Card for more information

SEPTEMBER, 1951 • FLOW

Circle No. 99 on Reader Service Card for more information

ALVEY-FERGUSON

the original • SINCE 1901



when you
think of
efficient
conveying
systems



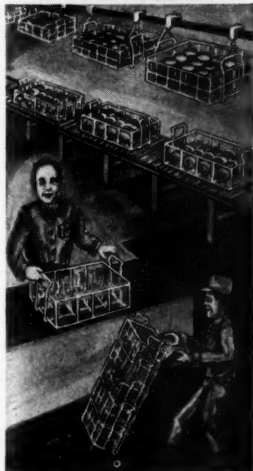
The
name to
remember
is...

ALVEY-FERGUSON



THE ALVEY-FERGUSON COMPANY
437 Disney Street • Cincinnati 9, Ohio

Carriers



... Are Easy to Handle in Production Operations

• These "Carriers" are engineered and built on order to meet the specific requirements of your parts and your system of handling. They may be handled manually, by hand truck singly or in stacks or on pallets, or by overhead or other conveyor. Parts are washed or degreased without removal from "Carriers." Critical surfaces are protected, handling time saved, non-productive time reduced, packing costs eliminated when carriers are used for interplant shipments.

Circular on Request



"If it's made of wire,
we can make it"

SPECIALISTS
IN MEANS OF
SUSPENDING
MACHINED
PARTS



MID-WEST WIRE PRODUCTS CO., INC.

JERRY GERALDS, President

FENKELL AT LINWOOD

DETROIT 21, MICH.

Circle No. 100 on Reader Service Card for more information
FLOW • SEPTEMBER, 1951

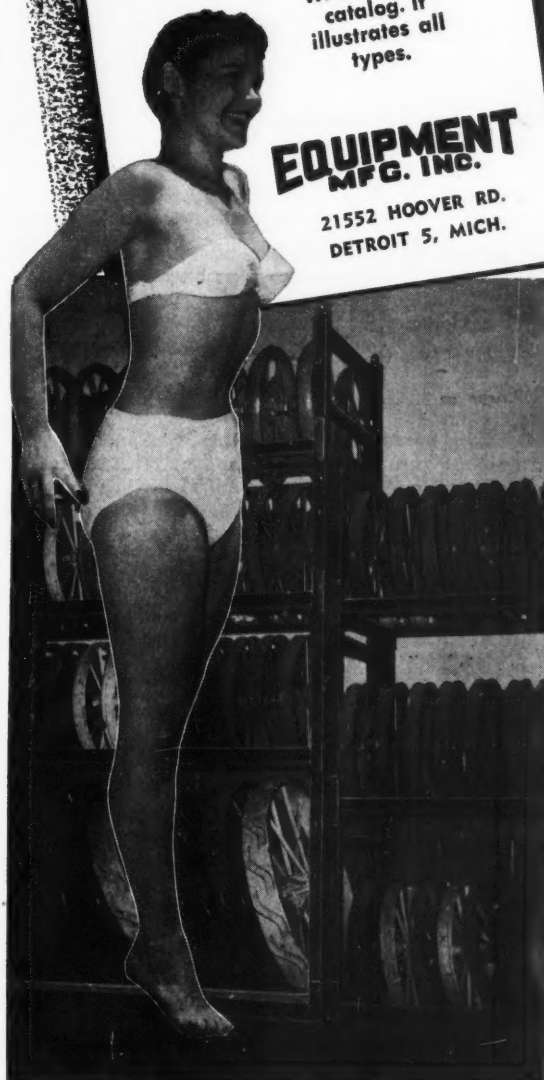
Well Stacked!

Portable stacking racks for general and specialized unit handling and storage, pallet stacking racks, coil stacking racks—Whatever your problem let us give you the benefit of our extensive rack engineering and manufacturing experience.

Write for our
catalog. It
illustrates all
types.

EQUIPMENT MFG. INC.

21552 HOOVER RD.
DETROIT 5, MICH.



Circle No. 101 on Reader Service Card for more information

USEFUL

BULLETINS • BOOKLETS • CATALOGS

The publications featured on these pages were written by experts. They are FREE publications. To obtain them use the postcard bound into this issue.

A comprehensive new catalog on roller conveyors has been published by the E. W. Buschman Company. The 16-page catalog shows a wide variety of roller conveyor types together with selection data and diagrams. Seven styles of ball bearing rollers are described as well as complete roller mounting specifications, curves, multiple rows, spurs, converging and hinged sections, supports, stands and guard rails. Many in-use photos illustrate roller conveyor at work in various industries. The use of roller conveyor in conjunction with wheel type conveyors is also explained.

Circle No. 150 on Reader Service Card for more information

Emphasizing the importance of equipment care and maintenance in the national mobilization program, Hyster Company has just issued a 12-page operator's guide and general information for the Hyster D7N towing winch designed exclusively for the Caterpillar D7 diesel tractor. The winch manual shows your operator how to get the most out of the winch. In four sections, the guide describes mechanical components of the winch, fundamentals and advanced operating instruction, typical winch operations and rigging methods, a summary of efficiency reminders and a glossary of winching terms.

Circle No. 151 on Reader Service Card for more information

If you're interested in more efficient visual control of production, scheduling, engineering, inventory, etc., you'll want to take a look at a 4-page bulletin entitled "Look at the Facts Instead of for Them." Published by Visi-Trol Corporation, the bulletin shows how visual control boards may be used to visualize operating effectiveness at a glance. Examples of typical applications are given.

Circle No. 152 on Reader Service Card for more information

Catalog 31 from Korb-Pettit Wire Fabrics and Iron Works, Inc., contains 40 pages of illustrated standard and special types of wire belting, weaves with specifications and detailed descriptions. Power formulae and construction details are covered fully as well as

suggestions for prolonging belt life and increasing efficiency. It's a comprehensive and useful handbook on spiral woven wire conveyor belts and complete conveyor systems.

Circle No. 153 on Reader Service Card for more information

A 56-page revised edition of the free pocket-size handbook of technical instructions and engineering data on the care of motive-power storage batteries has been published by Gould-National Batteries, Inc. Major addition to the handbook is a new six-page section on battery charging. Included in this section is information on modified constant voltage and two rate charging; boost, equalizing and emergency charging; control of discharge by four different methods; automatic control of charging by both ampere-hour meter and voltage relay timer; manual control of charging by specific gravity and volt ampere methods; tips on steel-tray battery charging; and charging equipment maintenance.

Circle No. 154 on Reader Service Card for more information

Announcement is made by Logansport Machine Company of another reprinting of "The Facts of Life on Air and Hydraulic Devices." First published in 1949, the demand for this manual has exceeded original expectations, Logansport says. The booklet presents in concise, matter-of-fact style the "Do's," "Don'ts," and "What To Look For" phases of setting up and servicing this type of equipment. The material was compiled specifically as a service to tool engineers, designers and maintenance men.

Circle No. 155 on Reader Service Card for more information

"Creped Cellulose Wadding in Military Packaging" is the title of a new booklet published by Kimberly-Clark Corporation. The booklet is designed as a guide for specification, procurement and use of the creped cellulose packaging material Kimberly-Clark makes. It contains recommendations for specifying, procuring and using creped cellulose wadding in military packaging.

Circle No. 156 on Reader Service Card for more information

"Over the Rough Spots" is a new pocket-size, 32-page booklet which gives a searching analysis of your flooring problems in three minutes. Graphically illustrated, it tells where to look for and how to correct bad floor conditions. It tells how to protect both concrete and wood floorings and maintain proper repair. Published by Stonhard Company.

Circle No. 157 on Reader Service Card for more information

The versatility of Wisconsin air-cooled engines and the part they play wherever portable power is needed is shown in a new bulletin published by Wisconsin Motor Corporation. A raft of photos show the hundreds of uses Wisconsin motors are put to in all types of industry. Charts and diagrams are used to show dimensions and power curves for different Wisconsin models.

Circle No. 158 on Reader Service Card for more information

A new catalog recently released by American Hoist and Derrick Company describes its complete line of electric car pullers and provides many suggested uses for this versatile piece of equipment. Only one man is needed to operate an electric car puller—on rail sidings, at loading docks, on piers, in mines or wherever

Circle No. 64 on Reader Service Card for more information

WEIGH MATERIALS ON THE SPOT SAVE UP TO 22% ON LABOR COSTS



Compact
Low-Cost

DILLON Weight Indicator



Picking materials up, moving them to a scale, setting them down and then picking them up again means double handling and greatly increased operational costs. With the DILLON Weight Indicator, loads are checked on the spot the instant they are lifted. Accuracy is guaranteed to be within ONE division or less at any point on the dial. Adjustable for large tare loads. 16" dia. dial. Swivel hook. Accidental overload and shock protected. 8 capacities from 0-250 pounds up to 0-20,000 pounds. Portable—weather-proof—dust-proof. Each unit checked with certified dead weights. Extreme utility at LOW cost!

Write today for illustrated, descriptive literature

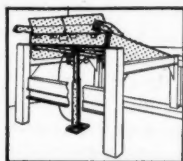
W. C. DILLON & CO., INC.

1421-Q S. CIRCLE AVE., FOREST PARK, ILL.

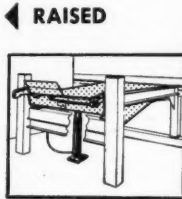
ADJUST-A-DOCKS

cut your dock handling
time **67%**

1 ADJUST-A-DOCK **= 3** ORDINARY LOADING DOCKS



LOWERED ▶



◀ RAISED

With Rowe ADJUST-A-DOCKS shipments are moved directly into highway trucks, eliminating costly hand loading. One ADJUST-A-DOCK handles three times the ordinary dock volume... often pays for itself in 30 days. Breakage is prevented... dangerous loose dock plates are eliminated. Ask for complete data today.

WRITE TODAY for free illustrated Bulletin showing typical installations.

ROWE METHODS, INC. 1741 East 25th St., Cleveland 14, Ohio



Circle No. 63 on Reader Service Card for more information

the moving of rail cars or heavy equipment is necessary. The catalog describes American's tree types of car pullers and shows the applications and specifications.

Circle No. 159 on Reader Service Card

illustrating case studies in a number of specific plants. Data relate to handling of cotton and rayon in storage, processing and shipping. A new type of clamp is described in detail.

Circle No. 160 on Reader Service Card

has been prepared by Big Joe Manufacturing Company. Application photos show the Big Joe at work. Also illustrated in the booklet: The Big Joe Model 5 Hydraulic Hand Truck.

Circle No. 161 on Reader Service Card

Elwell-Parker Company has issued an eight-page pamphlet in its series on Industrial Logistics. This one deals with use of power trucks in textile mills, describing and il-

A four-page, two-color booklet that shows you what the Big Joe all purpose lift can do to make your lifting jobs faster and easier

Towmotor Corporation has just finished a new Special Engineering Folder for industrial users of lift trucks who are faced with unusually difficult handling problems. The four-page folder illustrates many Towmotor devices specially designed to grip, clamp, grab or support almost any type of load, and lift, transport, unload, deposit, dump, upend or completely revolve it.

Circle No. 162 on Reader Service Card

Detailed information and specifications on Green-Penny's new adjustable, self-contained loading ramp are contained in a new folder just off the press. Complete specifications and illustrations are included in the folder.

Circle No. 163 on Reader Service Card

A new catalog released by Bay City Shovels, Inc., features the heavy duty design and construction of Bay's mobile cranes in the 3/4 yard series. Machinery assemblies, parts and attachments are shown in pictures and described in detail.

Circle No. 164 on Reader Service Card

Beaumont Birch Company offers a booklet giving detailed information on both hydraulic and pneumatic ash and flash handling systems. The booklet, compiled in question and answer form, discusses the elements and advantages of the various systems, and also of various disposal schemes, such as pumping to fill area, or pumping to storage sump or dewatering bin for removal of ash by truck. Schematic drawings of arrangements under specific conditions, also dia-

**THIS IS ONE PLACE
IN YOUR PLANT
FOR PRIME-MOVER**



Carrying the mail—parcel post and express packages—from the parts department shipping room. Gets the job done without delay at the end of the day.

SAVINGS IN MAN POWER



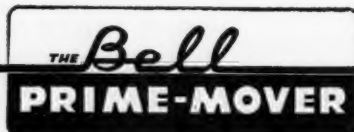
Does Many Bulk-Handling Jobs—Faster!

YES . . . there are many other places in your plant where a Prime-Mover will pay its way. This machine fills a real need in bulk materials handling. Quick change (2 minutes) from bucket to platform greatly increases its usefulness.

Wherever there's scrap, clean-up and other bulk handling jobs—

Prime-Mover supplies the capacity and the power to save the time of at least three men. Anyway you add it up—Prime-Mover multiplies manpower.

Dependable 5 h.p. Wisconsin engine and reverse under power with capacity of 1500 lbs. (10 cu. ft.) For name of distributor and additional data write to us.



Circle No. 65 on Reader Service Card for more information

grams of basic arrangements, are included.

Circle No. 165 on Reader Service Card

Pittsburgh Cargotainers are built of cold-drawn steel wire in 2000 and 4000 capacities. They knock down during storage, can be set up in minutes when you need them to handle or store the materials you're working with. A new folder published by Pittsburgh Steel Company shows how the Cargotainers give you a quick, accurate inventory with a quick look; shows how they are built for easy stacking to save you valuable floor space.

Circle No. 166 on Reader Service Card

Cannery and food processing executives will be interested in the story of savings through modern handlings which are described in a new Certified Job Study made by Towmotor Corporation. The study is based on operations at Filice and Perrelli Canning Company, Richmond, Calif. It shows how Filice and Perrelli cut handling time more than 95%, saved 75% in man-hour costs.

Circle No. 167 on Reader Service Card

Link-Belt Flexmount oscillating conveyors are the subject of a new four-page folder released by Link-Belt Company. The Flexmount design features simple one-piece flexible members which support the trough and function as springs in absorbing the energy of the trough movement at each end of the stroke. In effect, the trough oscillates at the natural frequency of the Flexmounts, reducing the reaction forces on the drive to a minimum and requiring only the horsepower necessary to convey material in the trough.

Circle No. 168 on Reader Service Card

Some years ago, the Addison-Semmes Corporation started work

CM METEOR

● Heavy duty electric hoist for stationary, plain, geared or motor driven trolley suspension. Single and two speed models. Capacities: ½ to 5 tons.



Here's Plant Improvement that
*Pays off in
3 Ways*

HOIST POWER

LOWERS HANDLING COSTS

Picks up raw materials, or finished parts for assembly and moves them along for pennies in power and seconds in time.

ACCELERATES PRODUCTION

Takes the slowing up "lags" out of assembly line movement. One man precision "spotting". Speeds up handling in shipping.

IMPROVES PLANT MORALE

Saves the backs and muscles of men so that they may produce with "morning" efficiency in late afternoon. Aids in accident control.

Frankly, we don't know how many factories have cut costs by putting CM Electric Hoists on production jobs, but we *do* know they keep coming back for more and more Meteors and Comets. You couldn't ask for more convincing evidence of a product's usefulness to industry than a constantly growing demand.



CM Meteor and Comet advantages are fully described in the complete CM Catalog. Write us for a copy and the name of your local distributor.

CM COMET High speed, sturdy, portable electric hoist. One hand control. Plug in on single or 3 phase power line. Capacities: ½ to 1 ton.

CHISHOLM-MOORE

HOIST CORPORATION

(Affiliated with Columbus McKinnon Chain Corporation)

GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.

SALES OFFICES: New York, Chicago and Cleveland • Distributors Everywhere

Circle No. 66 on Reader Service Card for more information

on an expendable pallet which would be suitable for use as a one-time shipper; something that could be thrown away by the ultimate consumer like paper bags are thrown away today. What Addison-Semmes engineers worked out is the Power-Pack, an expendable corrugated fibre-board pallet made in various styles and sizes. A sixteen-page booklet released by Addison-Semmes shows how these expendable pallets are used, tells what they can do.

Circle No. 169 on Reader Service Card

Step-by-step instructions for sealing V3 and W cartons with tape to meet government specifications are illustrated in a new wall chart offered by Minnesota Mining and Manufacturing Company. The chart illustrates 10 steps for sealing a carton's innerliner and outer seams, and for covering and protecting carton labels with waterproof "Scotch" brand acetate fibre tape No. 711. Features and physical properties for the tape are shown on the back of the chart.

Circle No. 170 on Reader Service Card

A 12-page illustrated bulletin describing its complete line of flight and belt type portable conveyors and under-car unloaders has been released by Lake Shore Engineering Company. The equipment is used for handling coal, coke, sand, gravel and other bulk materials. Brief specification data is given on both electric and gasoline powered models and on hand-move and self-propelled conveyors.

Circle No. 171 on Reader Service Card



50% more yardage with LODOVER

No Turn Dumping

LODOVER crowds into and loads material — Backs straight out — bucket moves overhead at controlled speed — Stays level — in back position bucket turns over completely as operator dumps load — Bucket returns to digging position as LODOVER moves forward ... Complete overhead cycle takes only 20 seconds.

1 yard Combination Overhead and Front End Shovel for INTERNATIONAL TRACTORS

Write for booklet — "HOW TO Increase Tractor-Shovel Production—Decrease Tractor-Shovel Maintenance."



Sold by

Service Supply Corporation

Your INTERNATIONAL HARVESTER INDUSTRIAL POWER DISTRIBUTOR

Circle No. 67 on Reader Service Card for more information

A new catalog featuring American Revolver Cranes in industrial use has been released by American Hoist and Derrick Company. It's a pictorial catalog with photos of Revolver cranes at work in dozens of different applications. Shows many specialized applications.

Circle No. 172 on Reader Service Card

Flash-Stone Company's new 12-page catalog shows you why the installation of industrial floors for long life at low cost is a job that requires experienced planning, skilled technical execution and exacting cost control. Describes how floors can be engineered to withstand moving and deadweight loads, shock and vibration, extremes of temperature, oils, greases, chemical and industrial wastes and other destructive agents.

Circle No. 173 on Reader Service Card

Publication of a completely new 8 page, two-color brochure on Plastic ock flooring is announced by United Laboratories, Inc. The booklet contains a combination of information on how and where to apply the flooring as well as certain technical data about the product itself.

Circle No. 174 on Reader Service Card

E. W. Buschman Company has just issued a new catalog illustrating its complete line of portable roller and wheel conveyors. The catalog gives complete conveyor specs and explains erection problems. Shows how to determine your conveyor requirements.

Circle No. 175 on Reader Service Card

A new 24-page bulletin on packaged electric power is available from the General Electric Company. The publication outlines methods of obtaining electric power equipment for quick expansion at low cost and with a minimum of critical materials. Use of packaged electrical systems, GE says, simplifies plant engineering problems, cuts equipment and installation costs. The result, explained in over 50 photographs, is a safer, more flexible, more dependable electrical system.

Circle No. 176 on Reader Service Card

IT WILL PAY . . .

Whether your company makes tanks or kiddy cars, whether you employ 10 or 10,000 people, the new FLOW DIRECTORY provides the only permanent volume of authoritative information about materials handling equipment and accessories. The new FLOW DIRECTORY will be the most comprehensive, accurate source of information ever published for plant operating executives. It will aid in reducing costs and increasing production. Complete trade mark listings will be included to aid your Purchasing Department in identification of equipment.

Order Your Copy of the Flow Directory Now!

The FLOW DIRECTORY is industry's most thumbed source of information about materials handling equipment, machinery and accessories. So great was the demand for the last edition that copies have not been available for the past six months. The revitalized up-to-date directory will be mailed to subscribers as soon as it comes off the press late this year. So, make your reservation now . . . all orders received between now and press time will earn the special pre-publication price of only \$5.00.

FLOW

1240 ONTARIO STREET
CLEVELAND 13, OHIO

Every time your material flow is slowed down, you foot a higher handling bill, Wm. Christensen Co., Inc., says in a new four-page folder that shows how the Christensen Easy-Load transfer plate keeps things flowing without a hitch. The Easy-Load is a fast worker because it's always in position on the dock; it becomes part of the floor when not in use. No need for hammers, pinch bars or crowbars. The folder shows how it works, gives full construction details.

Circle No. 177 on Reader Service Card

Tip back the Rol-Away model AW1 hand truck and it becomes a sturdy platform table for packing or unpacking the flat cases it was designed to carry. The Rol-Away can be operated by one man for packing, loading, hauling or unloading. It cuts out the need for putting packing cases on the floor; sheets or cases can be slid onto the platform from piles, then wheeled away. All the details may be had in a booklet offered by Rol-Away Truck Co.

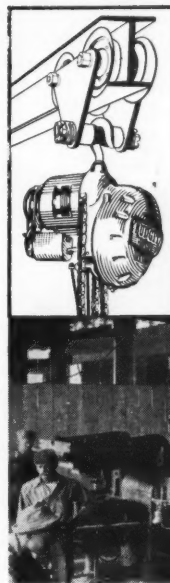
Circle No. 178 on Reader Service Card

Got a problem of handling materials during processing? Cambridge Wire Cloth makes baskets, crates, trays and fixtures to take the kinks out of in-process handling problems; a new Cambridge booklet tells about them, shows how they might help you out.

Circle No. 179 on Reader Service Card

The 1951 Catalog of Neilson wheels, released by The Neilson Wheel Company, shows off its line of semi-pneumatic tired wheels, zero pressure wheels; pneumatic tires and tubes; truck casters; rims and the rest of the Neilson selection. Full specs and prices are given for every piece of equipment.

Circle No. 223 on Reader Service Card



**Saves-
AS IT
EARNs**

The 'Budgit' Electric Hoist has saving ways important to operators and management. Electricity does the lifting. No torn ligaments. No lost time due to injuries.

The 'Budgit' works fast. The smallest size can lift 250 lbs. nearly half a foot a second. All it takes is a gentle pull on the control cord. Load and motor brakes act quickly, simultaneously—either one alone can hold the load safely. Anti-friction bearings and precision gears likewise contribute to fast, smooth performance.

The 'Budgit' is a meter-miser — uses only a few cents' worth of electricity a day. It is a complete, portable hoist — no installation cost. Merely hang up, plug in, and the 'Budgit' saves as it works. And, your maintenance man will see little of this hoist during its long, dependable service life.

Let the 'Budgit' boost your defense production—economically. Capacities: 250 to 4,000 lbs. Prices start at \$119. Write for Bulletin No. 391.



'BUDGIT' CONDUCTOR CORD TROLLEYS

keep flexible conductor cord away up out of the way while carrying electricity to mono-rail hoists. Roll smoothly around curves, past switches.



'Budgit'

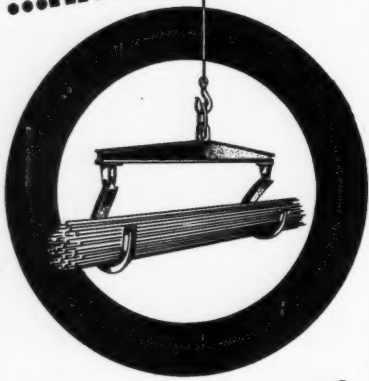
HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, and "American" Industrial Instruments.

Circle No. 70 on Reader Service Card

**LIFT QUICKLY
...HANDLE FASTER**



with
*** DOWNS SAFETY GRABS**
FOR CRANES AND HOISTS

Of Course They Save Money! That's why more plants every day are using DOWNS Safety GRABS! Consider just two major advantages: **THEY'RE FASTER**—one man can rig any load in seconds with these designed-for-the-job, snap-on Safety GRABS...many more lifts an hour than with old-fashioned or make-shift methods; **THEY'RE SAFER**—carefully engineered to provide a safety factor far greater than listed capacity ratings, with a grip that can't let go till you release the load...hook-tenders work with confidence, without fear of injury. Regardless of the size or shape of materials you're handling, there's a DOWNS hook, tong, grip or sling that will handle it more efficiently.

Write for Free Illustrated Catalog 200 Today!

DOWNS

CRANE & HOIST CO.

MECHANICAL ENGINEERS

540 W. VERNON AVENUE • LOS ANGELES 37, CALIF.

Circle No. 71 on Reader Service Card

news from the SALES FIELD

Frank L. Young, Material Handling Engineering and Equipment Co., Omaha is the sales representative for western Iowa and most of Nebraska, for the Automatic Transportation Company of Chicago. He will handle the full line of Automatic trucks. The company is located at 801 S. 16th Street.

Merrill F. Chapin is in charge of the new General Electric sales office for two-way radio and microwave equipment. The office is at 339 International Trade Mart in New Orleans, La. Chapin has been a district sales representative for GE since 1946.

Harry W. Hughes is the new West Coast manager for Brainard Steel Company. He will open a new office at 717 Market St. in San Francisco. Hughes was formerly with Sharon Steel Products Co. in Dearborn, Mich.

Coles Cranes, Inc. moved to their new manufacturing plant in Joliet, Illinois, on the 16th of July. The new postal address is P.O. Box 942, Joliet.

The Hyster Co. announced Freeman & Sons, Inc., of Miami, Fla., as its exclusive dealer for the Hyster lines in the 13 counties of south Florida. Freeman & Sons was organized in 1912. E. H. Freeman is the president, R. D. Freeman is secretary.

Prab Industries is moving to new and larger quarters at 19875 Mack Avenue in Detroit, Mich. Peter Ruppe and Alan E. Bodycombe, owners, credit the need for larger engineering quarters to the rapid growth of the material handling field and the impetus of the defense program.

Circle No. 68 on Reader Service Card



TRUCKS BUCKING?

Replace wheels with...

BRONCO INDUSTRIAL WHEELS

with the tire that won't roll off!

Variety of sizes, tread compounds, and bearing types to suit every need.



Consult
Your
Dealer
or write for
free catalog

BRONCO RUBBER PRODUCTS CO.
733 Stanford Ave., Los Angeles 21, Calif.
TRinity 3036



**6th Annual
Industrial Packaging
and Materials Handling
Exposition**

FEATURING

- "Short Course" sponsored by Case Institute of Technology (October 1-4).
 - National Protective Packaging and Materials Handling Competition.
 - Exclusive Exhibit of Protective Packaging and Allied Handling Products.
- ... Your opportunity to meet at one time, in one place, the people who specify—buy—use—every kind of product in the field of Protective Packaging and allied Materials Handling.

**In War and Peace
Write to:**

**The Society of Industrial Packaging
and Materials Handling Engineers**
20 West Jackson Blvd. • Chicago 4, Ill.
Circle No. 72 on Reader Service Card
SEPTEMBER, 1951 • FLOW

Men In the News . . .

Continued from page 24

. . . at Gifford-Wood Co.

William E. Herb, vice president and general manager, passed away July 3rd. He had been with Gifford-Wood since 1916. He was instrumental in many advances in the hauling of ice.

. . . at Lamson Corp.

Carl F. Dietz, president, has just been awarded the honorary degree of Doctor of Engineering by Stevens Institute of Technology. He was cited for his "long and successful career as an executive . . . for his active participation in Federal, business and community counsels and his loyalty as a citizen."

. . . at Rapids-Standard Co.

William O. "Bill" Hicks is the manager of the new Los Angeles branch.

. . . at Yale & Towne

William K. McGreevy is the new sales representative of the Pittsburgh regional office. He was transferred from the Richmond, Va. office.

. . . at Hyster

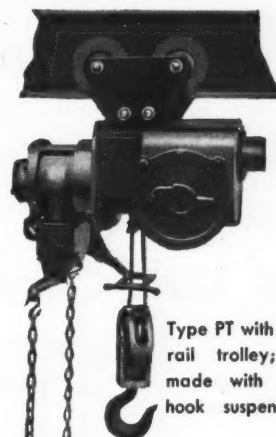
Philip S. Hill, sales manager, has been named a director of the National Sales Executive group. He will serve a year term to help coordinate the national program with the local clubs in the Oregon district.

. . . at Goodyear

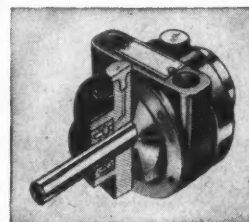
Richard W. Sabine, has been named manager of distributor sales in the company's Mechanical Goods Division. He succeeds W. T. Bell, who died recently.

NEW! PNEUMATIC HOIST with ROTARY TYPE AIR MOTOR

**Capacities 250# - 2000#
Fast Lifting Speeds**



Type PT with mono-rail trolley; also made with upper hook suspension.



Pulseless, sliding vane, rotary air motor; no pistons, no reciprocating parts.

- Worm Geared
- Compact—Light Weight
- Exceptionally Smooth Running
- Close, Sensitive Control

Write for further information

DETROIT HOIST & MACHINE CO.

8238 Morrow St., Detroit 11, Mich.

Send us information on a _____ lb. capacity, PT, Air Hoist

Company _____

Address _____

Name _____

Circle No. 74 on Reader Service Card

89

MOVE WITH ASSURANCE! MOVE WITH . . .

marforge

Load-Mobile Fork Truck



Also available as Lift Truck, Freight Truck, Pallet Truck, or Tractor.

Load-Veyors



Lightest weight steel conveyors. Exclusive rail arrangement prevents small packages from falling off. Strong, patented grid construction supporting ball bearing wheels on both sides.

Load-Lift



Scientifically designed for easy movement and dependable performance in heavy service.

Load-Carriers



Standardized trucks readily converted to meet every materials handling requirement. Remove or add accessories according to changing needs.



Load-Pacs

(Packaged Running Gear for Trucks). Make your own trucks — any size; any style (box, bin, or shelf). SAVE delay — freight — maintenance.



Dye House Trucks

Designed to facilitate draining and resist corrosive action of chemicals. Easy to clean.

Send for the complete illustrated catalog. We will be glad to furnish information on special requirements. Dept. M H 30 Garvey St.

Market Forge Company

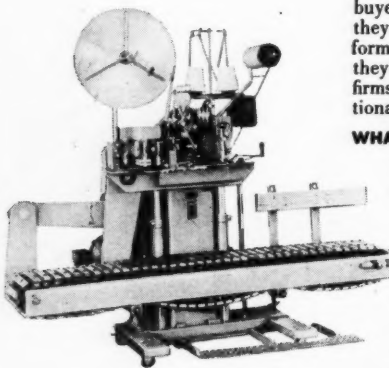
EVERETT 49 MASSACHUSETTS

54 Years in the Materials Handling Industry

Circle No. 73 on Reader Service Card for more information

FLOW • SEPTEMBER, 1951

YOU'LL KNOW THE
Bagpaker[®]
BY THE COMPANIES
IT KEEPS



These companies are repeat buyers of Bagpakers. Because they were pleased with the performance of the first Bagpakers they bought, every one of these firms bought one or more additional Bagpakers!

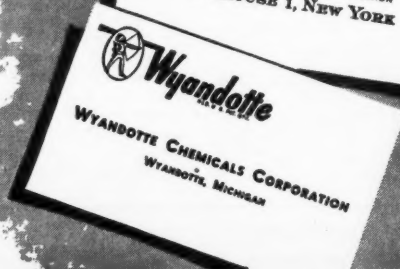
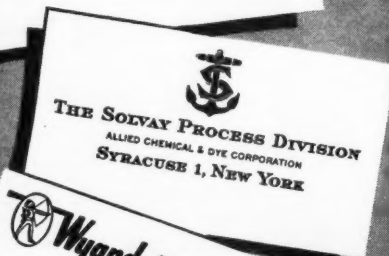
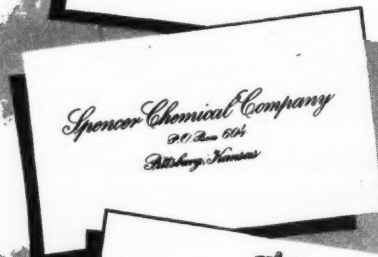
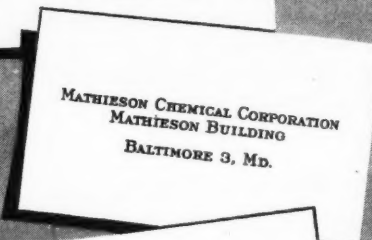
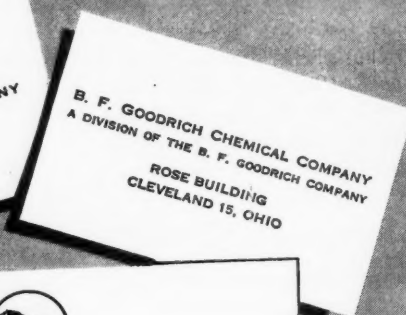
WHAT IS THE SECRET?

First, superior design and construction provide efficient, economical and trouble-free operation. Second, BAGPAK SERVICE assures continued operating efficiency.

That's why Bagpakers pay for themselves in a hurry—and then keep right on paying bonuses

in the form of better, more economical operation.

If you are considering the purchase of a new bag closing machine, then be sure to investigate the Bagpakers. Write today—ask for booklet No. 270 L.



International Paper Company



220 East 42nd St., New York 17

BAGPAK MULTIWALL BAGS

BAG PACKAGING MACHINES

BRANCH OFFICES: Atlanta • Baltimore • Baxter Springs, Kansas • Boston • Chicago • Cleveland • Denver • Los Angeles • New Orleans • Philadelphia • Pittsburgh • St. Louis • San Francisco.
 IN CANADA: The Continental Paper Products, Ltd., Montreal, Ottawa.

Circle No. 75 on Reader Service Card for more information

PACKAGING and SHIPPING SECTION

15 Ways to Ship Your
Products 93

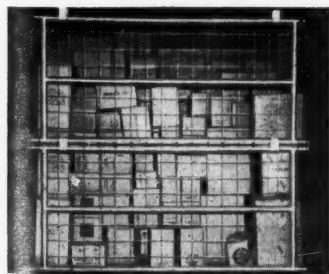
What's New in Packaging and Shipping Equipment?

An automatic tape dispenser designed by Trig-A-Tape Corporation feeds, cuts and attaches a strip of pressure-sensitive tape to any surface. All you do is pull the trigger on this new hand-held dispenser. Each squeeze of the trigger gives you a strip 1" long x 3/4" wide. Trig-A-Tape figures this size is handiest for the raft of carton closing and label attaching jobs in your shipping room. You can use ordinary pressure-sensitive paper tape or cellophane tape in the dispenser. White guide markings on its front flange make it easy to attach the tape right where you want it.

Trig-a-Tape Corp.

Circle No. 180 on Reader Service Card for more information

Two types of bulkheads are made by Pittsburgh Steel Products Company to keep your damage claims



down by holding merchandise secure during rail shipments. Ratchet bulkheads are constructed of seamless steel tubing and galvanized welded wire fabric; average installation time is about two minutes. Sectional bulkheads, used in bulkhead-tiered shipments, are made of two identical sections made to fit

ments, are made of two identical sections made to fit

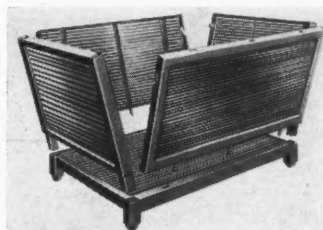
on top each other. Each section weighs 105 lbs. Telescoping cleats make it possible to fit all car widths. Installation takes about four minutes. Shown here is the sectional type.

Pittsburgh Steel Products Co.

Circle No. 181 on Reader Service Card for more information

Knock-down boxes developed by Jervis B. Webb Company can be disassembled so that 11 boxes can

be knocked down and stored in the same cubic foot space required for only 4 assembled boxes. The boxes can be used as bins with bases over their tops. A patented stacking feature allows the safe and rapid transportation and stacking of loaded or empty boxes in multiple numbers; as many as three loaded units can be fork trucked at one time. Webb figures the knock-down boxes will do away with "shadow" tonnage charges—the charges made for trailer or freight car loadings of boxes not designed to use the full capacity of the vehicle's loading space.



Jervis B. Webb Co.

Circle No. 182 on Reader Service Card for more information



What's the rush?

Better

Steel Strapping

Service!

JACK PETERS of Atlanta—like other Brainard Strapping System representatives—is always on the move.

That's because Jack knows the ins and outs that improve packaging and shipping methods. For instance, Brainard's catalog lists over a thousand different items of steel strapping, each designed to do a particular job better.

Which one do *you* use for *your* problem? That's where Jack Peters and his fellow Brainard field men come in. With their training and experience, they know the answers. Try them and see.

Brainard representatives are located throughout the U. S.; in Canada, P. J. McArthur Company in Toronto.



COMPLETE STRAPPING SERVICE. LIGHT AND HEAVY
DUTY STRAPPING. TOOLS AND ACCESSORIES

Brainard

SHARONSTEEL

WRITE: STEEL COMPANY STEEL STRAPPING DIVISION, WARREN, OHIO

Circle No. 76 on Reader Service Card for more information



Carloading, Blocking, Bracing—Handling on the Docks....

15 Ways To Ship Your Products

What happens to your product after it's packaged, ready for shipping?

Does it get the same intelligent handling on the shipping dock you gave it during production? And when it leaves the dock, what do you do to keep it in top shape 'till it gets to its destination?

Navy handling experts, working in the U. S. Navy

Materials Handling Laboratory, have figured that smart mechanical handling on your loading dock can cut freight car loading time by more than two-thirds. No reason why it can't do the same for truck loading.

But speeding up dock work is just part of your shipping job. Cut out expensive in-transit damage, too,

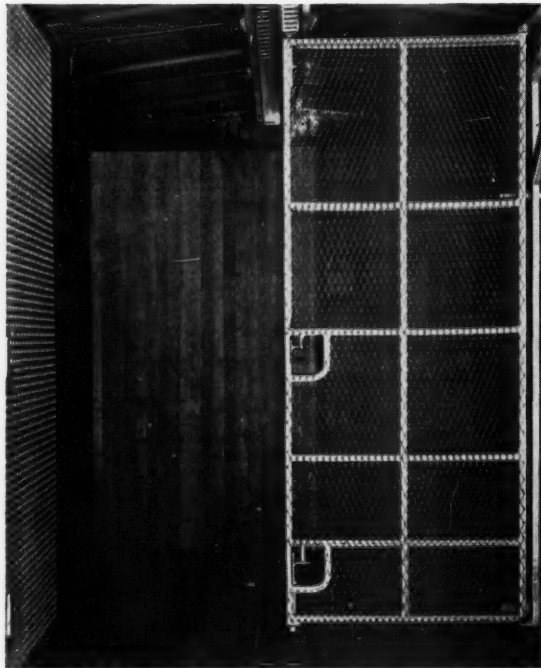
(Photo report begins on next page—story continues on page 100)



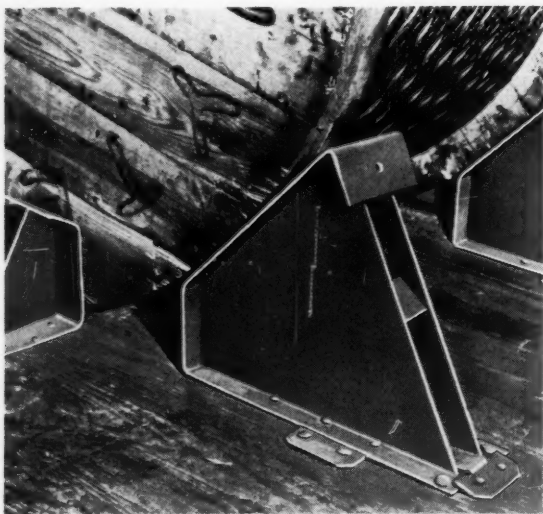
These new ideas in shipping equipment help you cut down damage costs



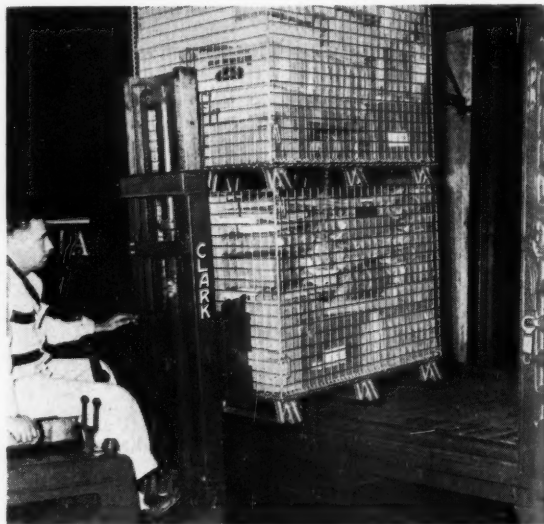
STEEL BULKHEADS keep small packages safe from smashups by holding them tight within small compartments.



STEEL GATES carried on trolley rails are adjustable. Two gates allow you to section off your rail cars in three compartments.



SPUR CLEATS (PLATES) are designed to secure this heavy reel. They are also used to block the wheels of vehicles and with other cylindrical objects.

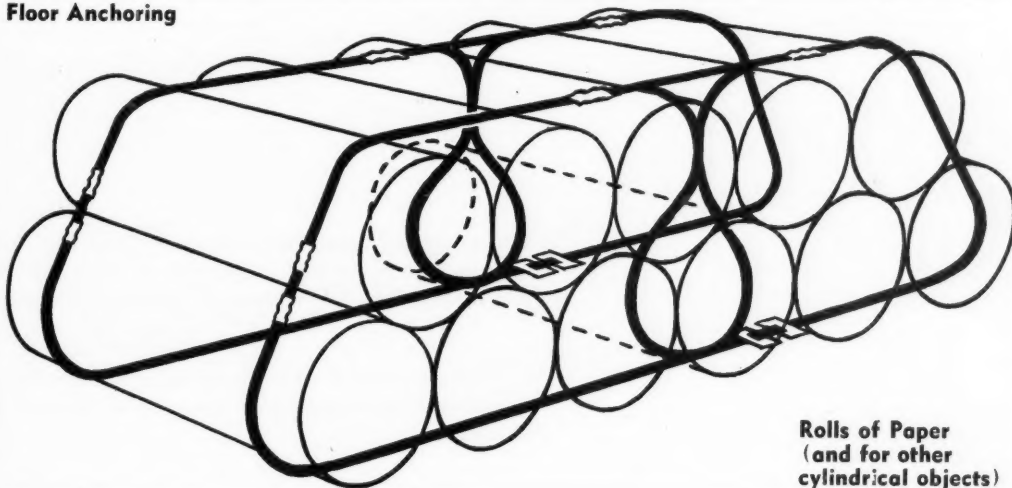


COLLAPSIBLE WIRE shipping containers give you smash-proof protection, knock down to save return shipping space.



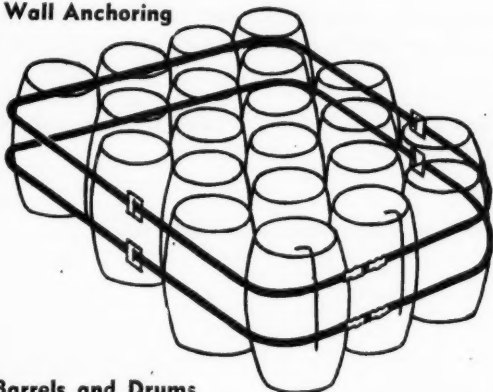
Snubbed floating loads have plenty of "give", yet are held in one spot
by floor or wall anchoring

Floor Anchoring



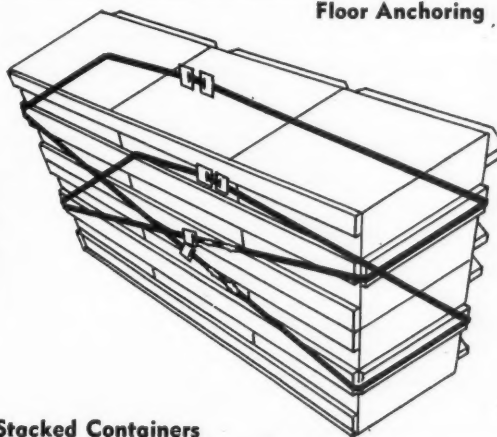
Rolls of Paper
(and for other
cylindrical objects)

Wall Anchoring



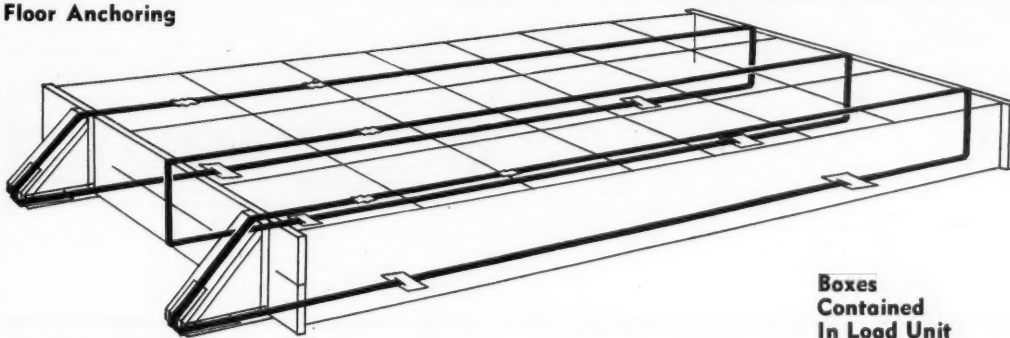
Barrels and Drums

Floor Anchoring



Stacked Containers

Floor Anchoring

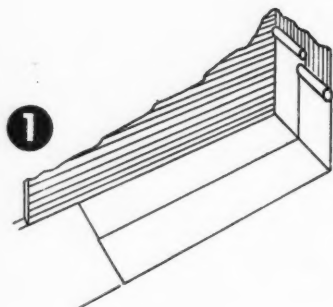


Boxes
Contained
In Load Unit

Drawings, Courtesy, Signode Steel Strapping Co.

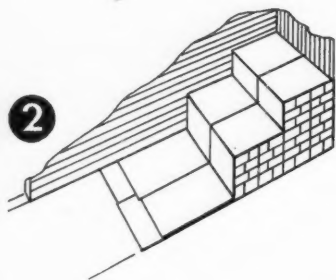


Shipping cased goods? The paper retaining method keeps them secure through rough hauls

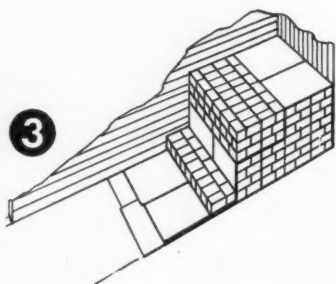


The retaining paper method of unit loading was worked out to control shipments of cased goods that develop slack in transit. Here's how it works:

1. Paper is started on floor about 6 ft. from doorway, then tacked to car wall a few inches above top of load.

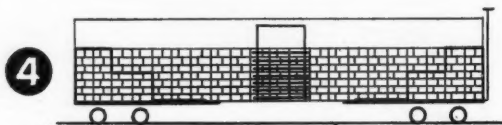


2. Containers are loaded. Containers in first two blocks are stowed full height; next two blocks are stowed half height. Then paper is rolled tight over cases. Paper ends are laid on floor.

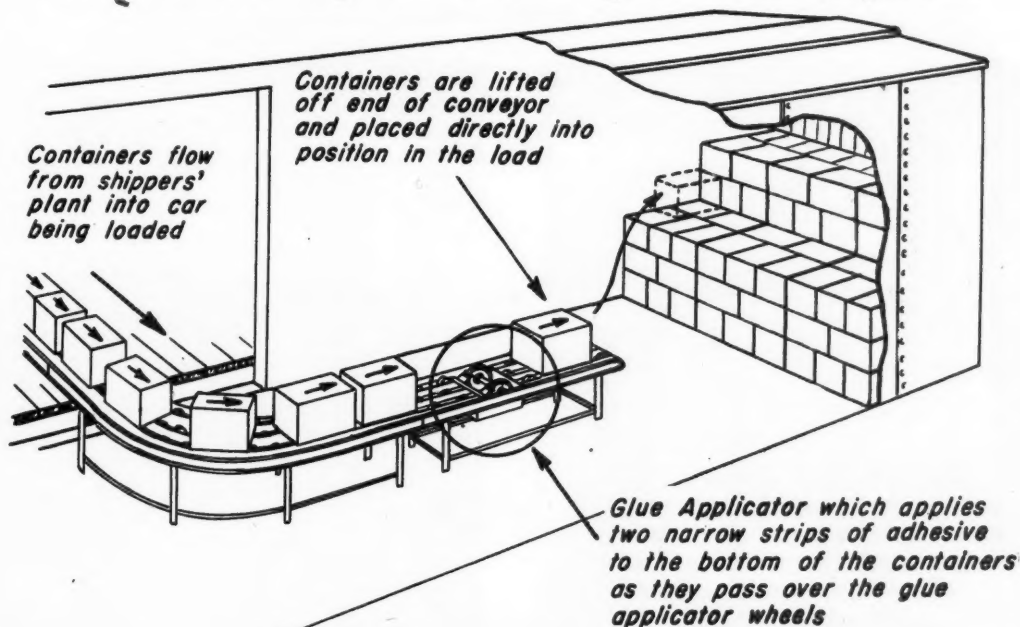


3. Rest of load is stowed in bonded block units to hold paper tight.

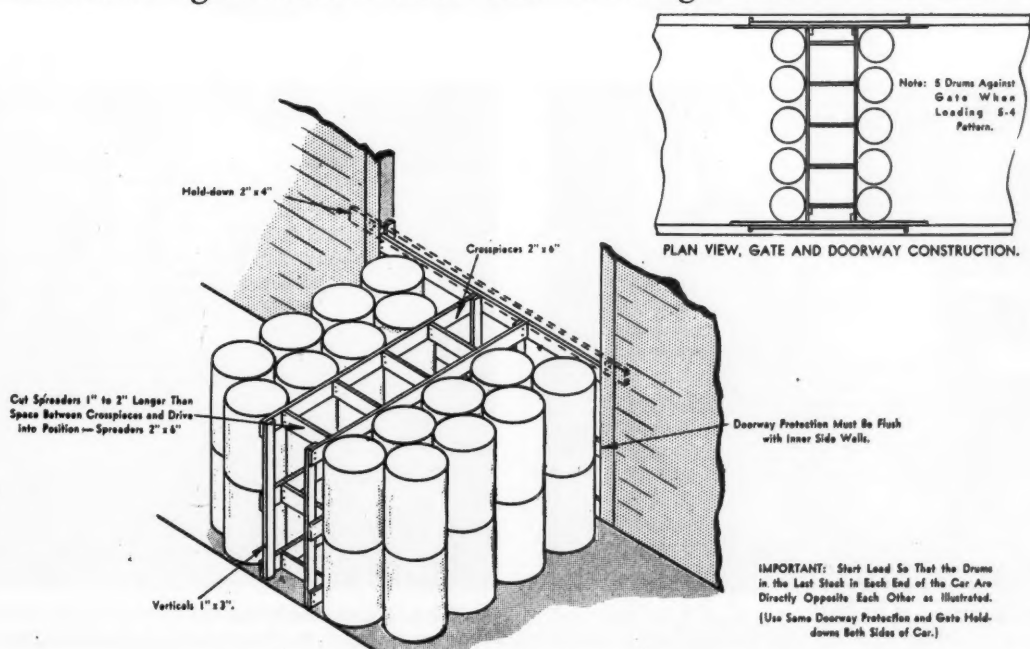
4. Cross-section of the completed load.



Glued unit loading is fast, makes good secure shipments



This is a rigid wood-braced load of straight-sided fibre drums

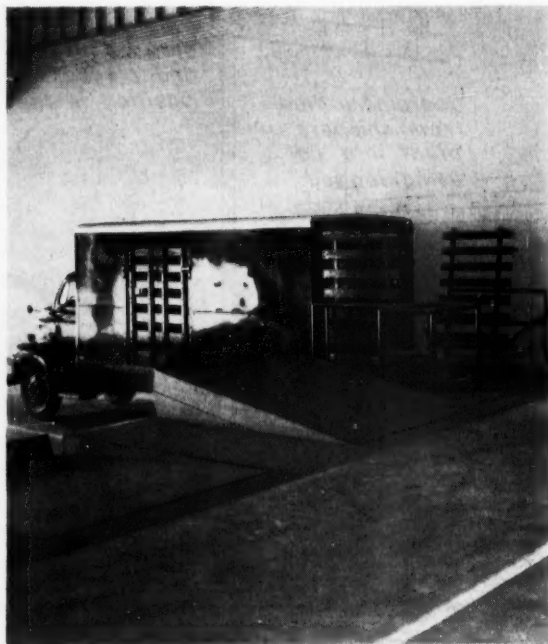


SMART SHIPPING GETS YOUR PRODUCT THERE FASTER, IN BETTER SHAPE

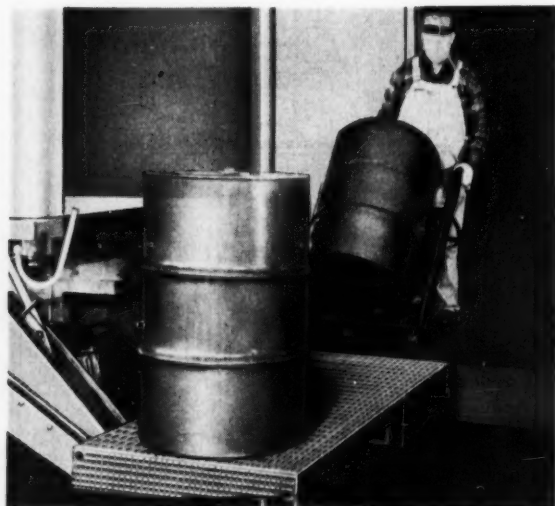
Use equipment like this to keep loads moving on your dock



AUTOMATIC DOORS can be opened by electric eyes or mechanical pulls to keep operators on their trucks. Pratt and Whitney photo



ADJUSTABLE RAMPS save time by adjusting in seconds to different truck bed and rail car heights. Many types are available.



HYDRAULIC TAILGATES lop valuable minutes off the time it takes to load and unload your trucks eliminate dangerous lifting of loads by operators.



MECHANICAL HANDLING can cut dock handling time by as much as two-thirds, U. S. Navy handling experts found.





World's Strongest Tape?

Mighty men can't break it, repeated impact shock doesn't break an inch-wide strip of flexible "SCOTCH" Brand Filament Tape No. 880! No other reinforcing material of the same width and thickness can equal this new packaging tape for combined strength and resiliency. Tests prove it.

And these tests are *tough*. Hammer-like blows from swinging pendulums, coast-to-coast shipments of tape-strapped cartons—even gruelling tumbling tests, much more punishing than the roughest handling, prove this new tape far superior to other strapping materials for most heavy-duty packaging and materials handling.

What's the reason? Over 5,000 continuous rayon filaments reinforce every inch of tape width just as cables support suspension bridges and as steel bars reinforce concrete. These filaments are embedded in an elastic, pressure-sensitive adhesive that *sticks* to the job, absorbs shocks and jolts again and again!

There has been a tremendous demand in all branches

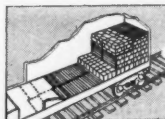
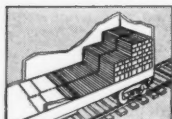
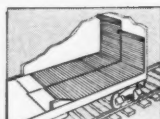
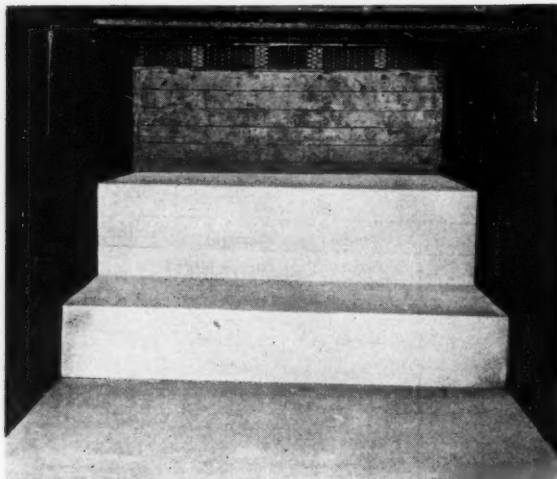
of industry for this remarkable new packaging tape since we introduced it a few years ago. You will be wise to plan on safe, strong "SCOTCH" Brand Filament Tape for the future, to provide you with faster, more efficient and economical packaging. Address inquiries to: F91 Minnesota Mining & Mfg. Co., St. Paul 6, Minn.



The term "SCOTCH" and the plaid design are registered trade marks for the more than 100 pressure-sensitive adhesive tapes made in U. S. A. by MINNESOTA MINING & MFG. CO., St. Paul 6, Minn., also makers of "Scotch" Sound Recording Tape, "Underseal" Rubberised Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: Minnesota Mining & Mfg. Co., International Division, 270 Park Avenue, New York 17, N. Y. In Canada: Minnesota Mining & Mfg. of Canada, Ltd., London, Canada.

Circle No. 77 on Reader Service Card for more information

SHIPPERS HAVE PROVED UNITIZED LOADING with FIBREEN REDUCES DAMAGE CLAIMS



**SIMPLE, DEPENDABLE,
ECONOMICAL PROTECTION**



One big canned goods shipper reduced claims over 75%

Success stories continue to keep the spotlight on FIBREEN Unitized Loading. Traffic managers of a wide variety of products shipped in cartons are proving that FIBREEN cuts down damage-claims in a big way. Tough, non-stretching, waterproof FIBREEN used with the Unitized Loading method, "binds" the whole load securely . . . prevents excessive shifting . . . stops damaging tumbles of cartons into end-wells caused by switching and other jolts in transit.

If you haven't heard the story of FIBREEN Unitized Loading, a qualified FIBREEN man will be glad to cooperate in giving you full details. Backed by over 20 years' successful FIBREEN packaging, this may lead to the answer to your "claims" problems.



**Write Dept. F-9 for
free samples and data**

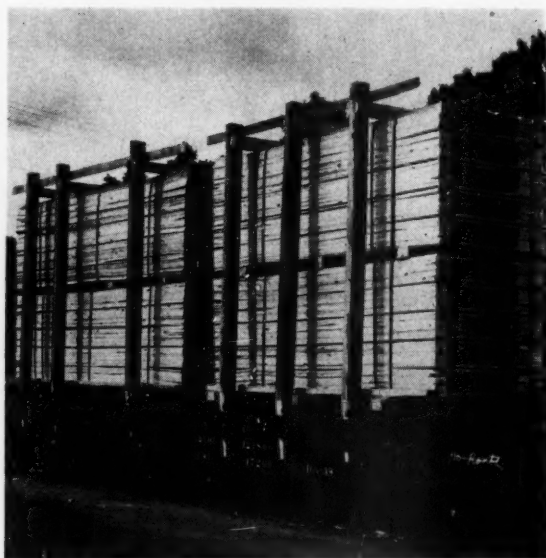
THE SISKRAFT CO., 205 W. Wacker Dr., Chicago 6, Ill.

New York 17, N. Y. • San Francisco 5, Calif.
London, England • Sydney, Australia

Circle No. 78 on Reader Service Card for more information
PACKAGING AND SHIPPING SECTION

15 Ways To Ship Your Products . . .

(Continued from page 93)



BRACING SHIPMENTS on open-top carriers is done through the use of steel strapping and wooden members.

and you do the whole job. Damage to shipments is a big item on industry's expense sheet; the American Association of Railroads put the 1950 rail damage loss at a whopping 84 million dollars.

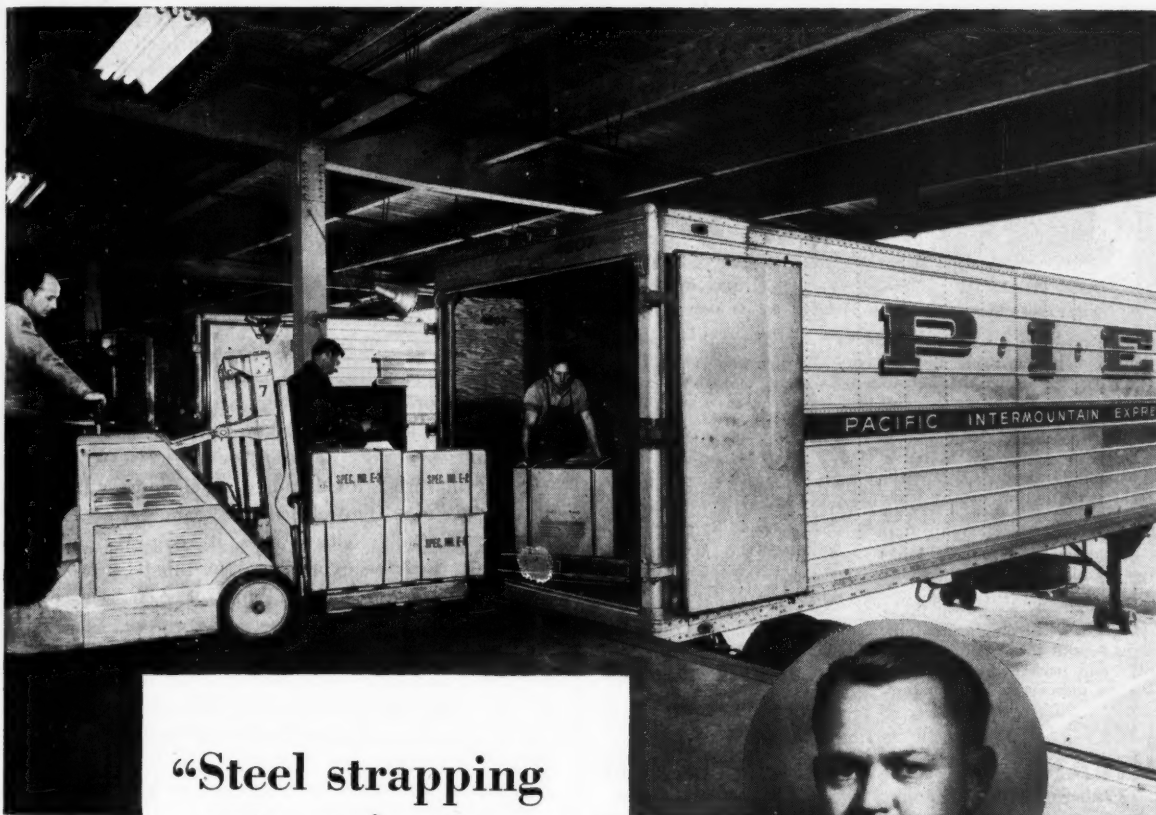
Smart Shipping Cuts Damage Rates

That means the railroads shelled out 84 million dollars to shippers whose goods were ruined in transit. But the money your railroad refunds on a damage claim rarely covers the whole cost of the damage. In the first place high damage claims are usually reflected in higher rates. Another consideration: how to make up for the good customer lost when your shipment arrived all banged up and set his production back two days?

Correct packaging is just as important in preventing damage as it is in making handling easier. The jogging your products take during their rail or truck ride can ruin them if they haven't been properly packaged. Steel strapping goes a long way towards cutting damage rates; it reinforces your containers, gives them extra strength that keeps them intact in spite of the beating they take during the shipping haul.

To keep loads made up of small packages from bouncing around in a freight car, several manufacturers have come up with bulkheading equipment that isolates your load within one small area. These bulkheads can be used to separate several different types of products in one car, too.

Spur cleats are designed for floor and side-wall



"Steel strapping acts as insurance

for the shipper,
carrier and
consignee."

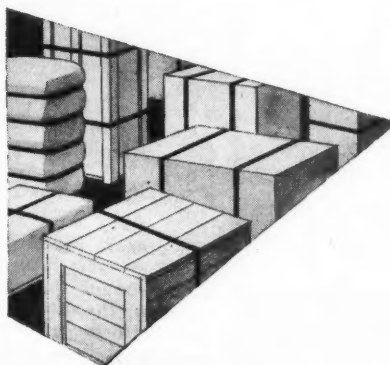
says Mr. Charles P. Palin

Freight Operations Manager
PACIFIC INTERMOUNTAIN EXPRESS

"In a cross-country operation like ours, with pick up service on one end and delivery on the other, we find steel strapping essential for the proper protection of many types of shipments."

From first-hand experience, Mr. Palin and countless others responsible for the safe transit of goods, recognize steel strapping as the trade mark of good packaging. Steel strapping permits the use of lighter, less expensive containers—at a big saving of space and weight. And with containers strapped into conveniently handled units, loading-unloading is faster, easier.

On defense production and in essential industries, steel strapping is at work saving time, labor and equipment. After the present emergency you can make these savings on your shipments. The Stanley Works, Steel Strapping Division, New Britain, Conn.
Offices in principal cities.



STANLEY

Reg. U.S. Pat. Off.

STEEL STRAPPING AND CAR BANDING SYSTEMS

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

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FLOW • SEPTEMBER, 1951

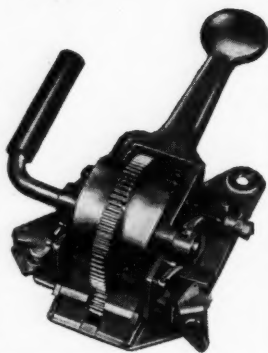
101

Your Packages Stay Tied with **INLAND MODEL "D" WIRE TYING MACHINE**

The best assurance you can have that your packages are tied securely is by using the Inland Model "D" and the new 25 lb. packaged round tying wire. This handy combination completes your tying operations in but a few seconds—just a single back-and-fourth motion of the lever tensions and ties the wire. Inland round tying wire—in 25 lb. coils—is dispensed absolutely kink-free at all times. It's available in 17, 17½ and 18 gauge, galvanized or coppered. For lower tying costs and higher output, insist upon the Inland Model "D" and packaged round wire. It's an unbeatable combination.

*Write for details on the Model "D" and
Tying Wire combination.*

INLAND WIRE PRODUCTS CO.
3960 South Lowe Ave. Chicago 9, Illinois



bracing. They are used individually to prevent horizontal thrust of containers and are used in conjunction with cross members, bulkheads and pallets to block whole loads. Other cleats are designed for securing cylindrical objects including wheels, reels, etc.

Another idea in shipping is a wire container that you use as a storage box in the plant as a shipping container enroute to your customers. It can be stacked during storage, locked for shipping and knocked down for its trip back home from the customer. In the rail car or truck trailer, it makes a perfect method for sending out different types of material all at one crack. If you want, you can paint the containers different colors, and load them according to your color code so that handlers will know which material is in which box.

Some materials are handled much more effectively in gondola cars than closed cars. Sheet steel, for instance; shipped in closed cars, it requires too much handling. But the expensive steel must be protected from water and dirt; rust ruins it. To keep open-car shipments in good shape many shippers use reinforced, waterproof wrapping. It is tough enough to keep out moisture yet pliant enough to be wrapped around odd-shaped packages without any trouble. This material makes an ideal wrap for big machinery shipped in open cars. Another use for it: keeping cartoned goods snug in freight cars. Used this way,

(Turn to page 104)

CLOSING LARGE PACKAGES YOUR PROBLEM?



- Entirely portable . . . weighs only 10½ pounds
- Requires no installation or supports . . . merely plug into any electrical outlet
- Economical to use . . . economical to buy
- Sews approximately 40 feet per minute

The closure produced by the FISCHBEIN *Portable BAG CLOSER* is actually stronger than the material surrounding the stitches. Stitches are tight and uniform in length. **SIMPLE TO USE . . .** merely hold in hand and carry to package. Starting and stopping machine is just an effortless flick of operator's thumb.

ADDRESS INQUIRIES TO:

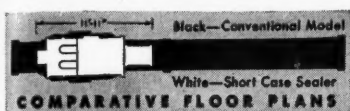
DAVE FISCHBEIN CO. Industrial Sewing Machinery
Dept. 4B, 38 Glenwood Avenue, Minneapolis 3, Minnesota

Here's your solution! **FISCHBEIN Portable BAG CLOSER**

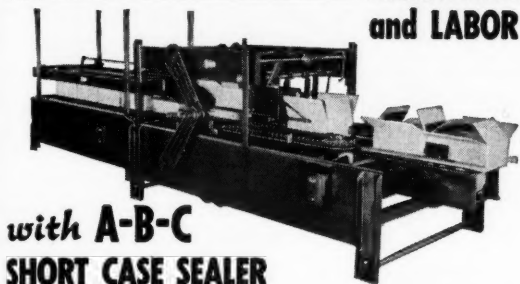


"A SMALL machine doing a BIG job"

Circle No. 82 on Reader Service Card for more information



Save FLOOR SPACE and LABOR

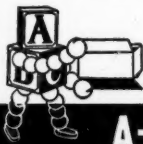


with A-B-C SHORT CASE SEALER

Save two-thirds of your valuable floor space with the A-B-C Short Case Sealer—with increased packaging efficiency, more speed, less expense... Automatically glues, folds and seals either or both top and bottom flaps of shipping cases in one operation. Made in eight models to fit any production requirement. Hot air heaters dry the glue in one-half the time. Speeds up to 30 cases per minute.

TOP QUALITY CASE HANDLING EQUIPMENT

Whatever your packaging job, A-B-C has a production proved machine for you—case sealers, unloaders and unscramblers, side sealers, and hand gluers.



WRITE NOW FOR DETAILS AND FLOOR PLANS

A-B-C PACKAGING MACHINE CORP.
QUINCY, ILLINOIS

Circle No. 83 on Reader Service Card for more information

Making a quality product is YOUR business.

Packaging it properly is OUR business!

THAT IS WHY . . .

so many companies with U. S. Government contracts requiring method IA-3, IA-8, IA-9, IIa, IIb, or IIc type packaging in flexible moisture-vapor proof barrier material, use AMSCO packaging equipment.

AMSCO equipment is specifically designed to properly fabricate, handle and seal barrier materials. During World War II, AMSCO pioneered in the development of dependable, diversified barrier packaging equipment.

Avoid the danger of improper packaging and great loss of money by rejects. **SEND FOR YOUR COPY OF AMSCO BOOK "BARRIER TYPE" Packaging for U. S. Government orders.** Available at no charge. Write Dept. F

IMPORTANT

Many Government contracts specify packaging in Polyethylene, Cellophane or Pliofilm. AMSCO has equipment for fabricating, handling and sealing these materials.



AMSCO

PACKAGING MACHINERY, INC.

31-31 48th Avenue, Long Island City 1, N. Y.

Specialists in diversified Packaging Equipment

Can we help you with defense orders?

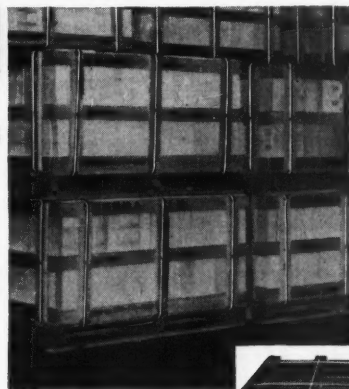
GERRARD ROUND STEEL STRAPPING complies with packaging specifications JAN-P-106A and JAN-P-108

• Take advantage of Gerrard's years of experience in packing and packaging when you face the problem of packing defense orders. Gerrard Round Steel Strapping complies fully with the joint Army-Navy specifications JAN-P-106A and JAN-P-108 for overseas packing.

A Gerrard engineer can help you with your packaging problems. He can assist you to plan boxes and cartons that conform to specifications, and at the same time help you to make the best use of the steel strapping available for packaging. Where practicable, our engineer will demonstrate the advantages of using Gerrard Steel Strapping for bundling, palletizing, or securing packages with the Diagonal Tie.

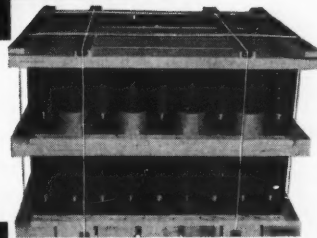
Orders for defense requirements receive preference in delivery according to current regulations. Strapping available for non-defense orders is being equitably distributed among our customers. Phone, write or wire for further information.

Gerrard Steel Strapping Company
2937 W. 47th St., Chicago 32, Ill.



◀ Fire bricks, crated and palletized for export, are firmly tied with Gerrard Strapping. Gerrard Steel Straps are galvanized to withstand corrosion.

These shells were easily and securely tied to a pallet with Gerrard Round Steel Strapping.



◀ The Diagonal Tie, applied with Gerrard Round Steel Strapping, reinforces all 6 sides of box, carton or crate. Gerrard Strapping grips tightly and evenly, holding contents securely until they reach their destination.

UNITED STATES STEEL

Circle No. 84 on Reader Service Card for more information

Circle No. 85 on Reader Service Card for more information

Here's a better way to Mark Parts—in Colors!

Whether it be marking for dimensions, inspection, stocking or assembly identification, you'll find the Flo-master does a better job in less time. Its felt tip glides over any surface—metal, plastic, wood, etc. with broad bold lines or fine lines.

Flo-master semi-opaque inks—waterproof, non-smudging, fast-drying—come in a wide range of colors.

For light colored surfaces, use Transparent Inks with "POCKET SIZE" Flo-master. For dark, hard-to-mark surfaces, use Semi-opaque Inks with the "KING SIZE" Flo-master.

Adopt Flo-master Color Marking and see the difference!

Ask your supplier or write to Cushman & Denison Mfg. Co., 153 West 23rd Street, New York 11, N. Y.



Cap of "King Size" may be screwed to bench to serve as stand.

KING SIZE
8 3/4 in.

POCKET
SIZE
6 3/4 in.

Flo-master
FOUNTNBRUSH



STEELBAND Leads the Band

Now is the time to order Allegheny STEELBAND strapping, seals, tools, and accessories to insure your present and future needs. Our company is rapidly expanding to meet the growing demand for our products.

ALLEGHENY STEELBAND CO.

Box 716, Pittsburgh 30, Pa.
(WAInut 1-7100)

STRAPPING
AND SEALS

STEELBAND

ACCESSORIES
AND TOOLS

it is wrapped around sections of the load to prevent excess shifting.

Right Equipment Makes a Difference

There is plenty of handling equipment available to make your shipping work easier. Hand lift trucks, hydraulic dock boards and tail gates, electric-eye systems all help you keep goods moving.

Motor Cargo, Inc., Reading, Pa., uses special steel transfer plates in its loading docks to handle twenty large trailer trucks at one time. Covering an area of 50' x 100', Motor Cargo's terminal has no outside dock. Trucks back right up to the doors of the storage area and are loaded by workers inside the building. A seven-foot overhang on the terminal roof keeps workers out of the weather. One way to keep things going at a good clip on your shipping dock: use packages wherever possible to give your product a regular shape that is easy to palletize and move as a load unit. The Freight Loading and Container Section of American Association of Railroads has done a fine job of helping shippers use the right containers for their different products. This section makes recommendations both on type of container and method of loading.

If your material is odd-shaped and unsuitable for palletizing, overhead conveyors often can be used to carry the product right from your production line to freight cars or trucks. One large furniture manufacturer whose merchandise is too bulky to be pal-

STOP

THAT 12-MILLION DOLLAR LOSS!

American Railroads say "12 million dollars is lost yearly due to poorly marked packages which go astray." This loss would be stopped if ALL shippers observed Rule 6 Marking Freight—"Freight must be STENCILED or otherwise plainly and durably marked."

Assure safe delivery of your own shipments... write for free stencils and Shippers' Handbook. Pin this ad to your business letterhead with your name—and mail it.

MARSH STENCIL MACHINE COMPANY
67 MARSH BLDG. • BELLEVILLE, ILL., U.S.A.

MARSH

Electric and HAND OPERATED MACHINES IN THREE SIZES: 1/4" • 3/8" • 1"

Circle No. 86 on Reader Service Card for more information
104

Circle No. 87 on Reader Service Card for more information
SEPTEMBER, 1951 • FLOW

lized uses a system of overhead conveyors with platforms. These carry the heavy stuff right out of his plant onto the dock without a hitch.

Outsized products that leave your yards in open gondolas, flat cars or truck trailers can be handled with bridge cranes. The cranes take them out of the shop and spot them in your carriers without stopping on the dock.

All this equipment is designed for one thing: fast handling. In shipping, time is money. Lost time is money down the drain.

Whether your problem is moving material faster on your shipping dock or getting it to your customers in good shape, better take a look at some of the shipping ideas on these pages. They can save you a lot of money.

FLOW wishes to thank the following firms for their help in the preparation of this article and the excellent data which they supplied. ACME STEEL CO., AMERICAN ASSOCIATION OF RAILROADS, GLOBE HOIST CO., HERCULES STEEL PRODUCTS CORP., PEYTON SPUR CLEAT CO., PITTSBURGH STEEL PRODUCTS CO., PULLMAN-STANDARD CO., THE SISALKRAFT CO., THE SIGNODE STEEL STRAPPING CO., THE STANLEY WORKS, UNION STEEL PRODUCTS, INC.

Need a new ELEVATOR?

Here's your best buy for 2, 3 or 4 stories

Oildraulic Elevators (passenger or freight) are designed for low-cost installation and economical, trouble-free operation. No penthouse or heavy load-bearing shaftway structure needed... powerful hydraulic jack supports car and load. Owners report savings up to 25% on installed elevator costs. Car sizes, capacities, and controls as required.

Smooth, quiet Rota-Flow power

Rota-Flow, revolutionary new hydraulic power transmission system, eliminates vibration and "pumping" noise, and operates with greater efficiency than any other hydraulic power unit. Automatic floor leveling within 1/4 inch guaranteed, regardless of load size or rate of speed. Power used during rise only—economical.

Write for Catalog RE-304
ROTARY LIFT CO.

1043 Kentucky, Memphis 2, Tenn.

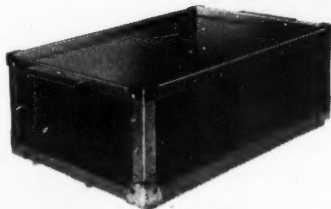
Rotary
OILDRAULIC ELEVATORS
PASSENGER OR FREIGHT



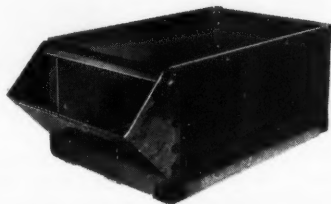
Over 50,000 Oildraulic elevators and lifts now in use... backed by Rotary's coast-to-coast service organization.

PROMPT DELIVERIES!

TOTE BOXES



Standard Tote Box
18" x 12" x 6" deep
\$3.10 each F.O.B. plant



Bin Front Tote Box
18" x 12" x 8" deep
4" bin opening
\$3.55 each F.O.B. plant

Features:

- Hard vulcanized fiber
- Self-stacking
- Steel-reinforced-riveted construction for extra rigidity

- Fiber Boxes
- Fiber Trucks

Write today for prompt deliveries on your requirements.

NASSAU FIBER-CRAFT CO., INC.

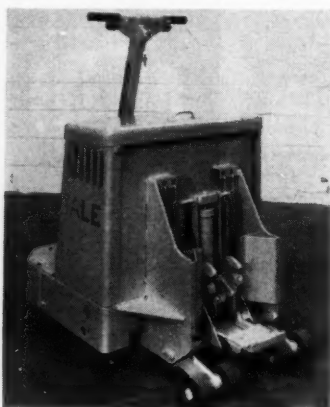
1 BAY STREET • OYSTER BAY, NEW YORK

Circle No. 89 on Reader Service Card for more information

NEW PRODUCTS

For more information on these products, use the postcard bound into this issue.

A new motorized tractor that automatically engages various types of industrial trailers will permit operation in very narrow aisles. Yale & Towne Manufacturing Company makes the tractor, calls it the Grip-Tow. In operation, the motorized tractor is driven to the end of the trailer and a push button is pressed engaging a hook on the tractor with the lower side of the trailer frame. The hook then pulls the trailer up snug to the tractor. Next, a pair of secondary hooks reach out and grab the top part of the trailer frame to engage tractor and trailer. Finally, the trailing wheels of the tractor lift off the floor so that the weight of the rear end of the tractor is supported on the trailer and both form an integral unit.



to the tractor. Next, a pair of secondary hooks reach out and grab the top part of the trailer frame to engage tractor and trailer. Finally, the trailing wheels of the tractor lift off the floor so that the weight of the rear end of the tractor is supported on the trailer and both form an integral unit.

Yale & Towne Mfg. Co.

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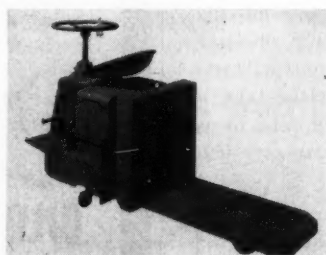
A new reinforced felt tape with a pressure-sensitive adhesive back has been developed by Products Research Company. The new product, called Kling Felt, needs no paper or other separation material between layers. Finger pressure sticks it down. Kling Felt is sold in rolls from 1/4" to 66" wide and in the following thicknesses: 1/64", 1/32", 1/16", (100' long); 1/8" (50' long); 1/4" (25' long). It's also sold as a cut gasket, die-cut to specifications.



Products Research Co.

Circle No. 186 on Reader Service Card for more information

To suit special jobs, the new Load-Mobile electric lift truck made by Market Forge Company is equipped with narrow lifting platform. Width of the platform is only 18" and can be furnished in 6", 7", 9" and 11" lowered heights to engage conventional platforms. The trucks have been built as narrow as 15" to meet special conditions.

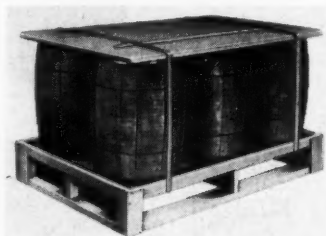


A set of stabilizing casters is placed on the unit to prevent tilting in making sharp turns. These casters are spring-mounted; in normal operation they clear the floor.

Market Forge Co.

Circle No. 187 on Reader Service Card for more information

A means of simplifying the transportation and storage of hard-to-handle kegs is a recent development of Phillips Mine & Mill Supply Company. The unit consists of a steel keg pallet and a steel cover for protecting the kegs and their contents. Designed for handling with a fork lift truck, the pallet will accommodate six standard kegs on its 42" x 28" deck. The deck is recessed slightly to prevent kegs from rolling off when the unit is being moved. The cover is attached with steel bands.



Phillips Mine & Mill Supply Co.

Circle No. 188 on Reader Service Card for more information

Extra adhesion and moisture-resistance are two big selling points of Lowebo, Inc.'s Oncrete dressing for concrete flooring. Oncrete is applied in two coats;

a coat of clear solution first, then a coat of colored solution. The first coat gives you an adhesive and moisture-proof barrier between the concrete and the second coat. Lowebeo says adhesion is the greatest factor in the performance of any floor coating.

Lowebeo, Inc.

Circle No. 189 on Reader Service Card for more information

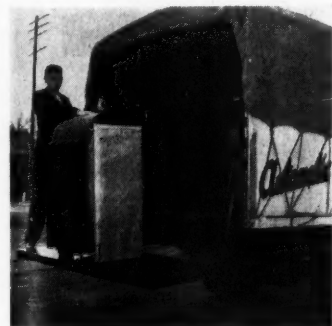
Accessibility of 15-inch Motorola F.M. 2-way mobile radio housing has been increased greatly by the addition of a new "split-housing" feature now being introduced by the company. New 30 and 60-watt mobile sets are being made with the new design that makes mounting possible in positions where the drawer-type housing could not

be installed because chassis withdrawal would have been impossible. The split-housing idea allows you to lift the chassis out of the housing's lower section. If the unit is mounted so that frontal removal is easier, the chassis can be removed by drawer-action just as with former housings.

Motorola, Inc.

Circle No. 190 on Reader Service Card for more information

You can mount the Winkler-Quinn Electric Liftman on any of trucks $\frac{1}{2}$ -ton capacity and up. The new tailgate weighs less than 500 lbs. It is telescoping, eliminates the problem of errors and costly installation; you can transfer it easily from one truck to another. It operates on your present truck battery. No extra accessories are needed. Installation time ranges from $3\frac{1}{2}$ to 10 hours depend-

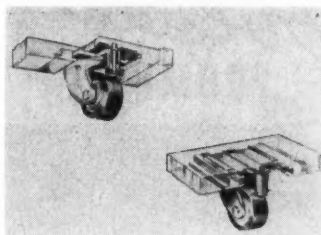


ing on the type and condition of the truck. It can be mounted on the side or rear of trucks and semi-trailers. Lifting capacity is 2000 pounds. Gate opens and closes by power.

B. M. Quinn Corp.

Circle No. 191 on Reader Service Card for more information

Demountable caster and wheel assembly is the latest thing out of Aerol, Inc. The five-inch caster is



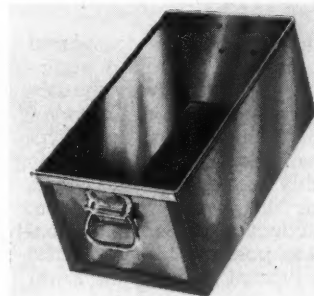
made of cast aluminum; it's easily placed in operating position, just as easily removed. Both caster and wheel are especially engineered for 20 percent greater rollability. They're lifetime lubricated.

Top plate of the new caster slides onto a mounting plate fixed in the basic structure of the unit to be moved. It locks into place by a spring type locking device. That way, the unit is easily moved from one point to another, and casters can be removed in a matter of seconds for use where needed.

Aerol Co., Inc.

Circle No. 192 on Reader Service Card for more information

Metal shop boxes made by Platt and Labonia Manufacturing Company are designed to give you quick, safe handling of materials during shop production operations. Drop handles and a stacking feature allows you to pile and store the boxes in a minimum of space. The boxes are sold in eight standard sizes, choice of two weights of material—16 and 18 gauge



and in sizes up to 22 inches long by 12 inches wide by 8 inches high.

Platt & Labonia Mfg. Co.

Circle No. 193 on Reader Service Card for more information

A low-lift platform-type truck with platform built in two sections has been developed by Elwell-Parker Electric Company. It was designed to meet special requirements, part of a load being suspended between the platforms, and also is used as an ordinary platform truck in handling standard skids and tote boxes. This dual purpose was achieved by dividing the forward trail axle. Each of two trail wheels has a separate axle mounted in its individual frame. The two parallel frames are strongly built, reinforced and welded to the truck body. Platforms are joined at their rear ends in a rigid structure, enabling them to be raised

Delivered PROMPTLY



A typical installation of Sectional Conveyor assemblies "Job-Fitted" to the efficient operation of this aggregate plant.

Today three major factors must be considered in the purchase of material handling equipment—performance, price and **delivery**. Baughman Sectional Hi Speed Job-Fitted Conveyor assemblies are built to meet these specifications. Each Baughman Sectional Conveyor is engineered, thoroughly tested and load rated, insuring satisfaction in every installation. Through quantity production of Sectional Conveyor Assemblies it is possible to stock basic units, which insure prompt delivery at lower cost.



The same sectional assemblies and job fittedness is available in portable and permanent Baughman Conveyors. Speedy quotation, prompt delivery and shipment in most cases from stock, allow Baughman to offer immediate action to your inquiry.

Write for Free Catalog #A-57 or contact your nearest Baughman Industrial Distributor.



manufactured by
BAUGHMAN MANUFACTURING CO. Inc.

115 ARCH STREET
Circle No. 90 on Reader Service Card for more information

JERSEYVILLE, ILL.

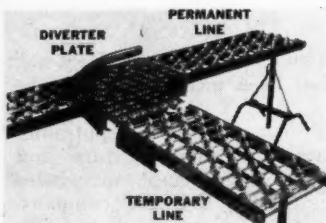
or lowered simultaneously as a unit. Their forward ends are connected to the wheel frames by forged steel links and the platforms retract as they are raised.

Elwell-Parker Electric Co.

Circle No. 194 on Reader Service Card for more information

A flow diverter that connects at any point on a permanent line of Rapid-Wheel gravity conveyor to move cartons in and out of storage bays without manual handling has been developed by The Rapids-Standard Company.

Temporary spur lines can be set up quickly and easily on either side of a main conveyor line with this new attachment. The diverter kit is made up of a connecting yoke fastened to a 3-foot section of aluminum Rapid-Wheel and a slotted aluminum diverter plate which has conveyor wheels projecting slightly above the surface. An adjustable curved aluminum guard rail also is included in the kit.

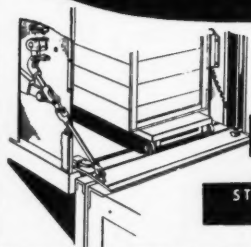


The Rapids-Standard Co.

Circle No. 195 on Reader Service Card for more information

REDUCE OPERATING AND PRODUCTION COSTS WITH

ALEXANDER ELEVATOR SILLS



**SPEEDS MATERIAL
HANDLING**

**CUTS TRUCKING
HAZARDS**

**STOPS DAMAGE
LOSSES**

• Eliminate material handling delays, prevent elevator accidents, stop damage losses to merchandise and equipment with Alexander Safety Sills. Unique design permits bridging of wide gap-over door opening from elevator floor to building floor landings. Each sill compensates for differences in floor levels and provides easy, safe and smooth trucking surface.

Write today for catalog F for detailed information.

ALEXANDER SILL COMPANY

manufacturers of patented
SAFETY FREIGHT ELEVATOR TRUCKING SILLS
AUTOMATIC ELEVATOR DOOR TRUCKING SILLS
970-72 N. MILWAUKEE AVE. • CHICAGO 27, ILL.

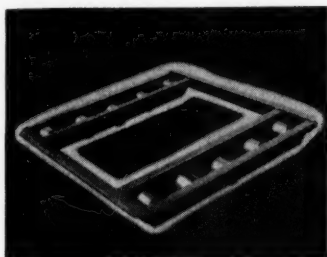
Circle No. 137 on Reader Service Card for more information

When heavy loads must be raised as well as moved, the Barrett Hi-Lift electric truck will do it. Barrett's Hi-Lift supplements the Barrett Power Ox line. The new unit has the basic characteristics of the Power Ox models: walking operators; electric lift and travel; convenient finger tip control of all movements. Compactness and short turning radius make it easy to handle in close quarters. There are four Hi-Lift models available to handle a wide variety of handling jobs.

Barrett-Cravens Co.

Circle No. 196 on Reader Service Card for more information

Because reefer cars have narrow door openings and are equipped with slatted deck construction for the circulation of refrigerated air, unit pallet loading of these cars has always been a tough job. To get around the narrow door headache, Frank L. Robinson Company has come up with its Ace Reefer Pallet Loader. The new



equipment has a heavy duty, lightweight, high tensile steel alloy frame; 10 double ball bearing rolls; full

Circle No. 91 on Reader Service Card for more information

The ANSWER To Those Ever Changing CONVEYOR PROBLEMS



FLEXIBLE
PORTABLE
ADJUSTABLE



Portable



Flexible



Adjustable

Bring your conveyor to your work . . . corner posts or other obstacles are no longer a problem to conveying products or keeping production lines operating . . . Convey around them the FLEX-CO way, designed for constantly changing production problems, car-loading, truck platforms, shipping rooms, ware houses, etc. Sections may be added or taken away as needed, quickly and easily. Inclines or grades can be formed quickly as required. FLEX-CO Roller Conveyors are designed for material handling that changes from time to time to supplement and make your present conveying lines really flexible and extend them where it has never been possible nor practical before. FLEX-CO Roller Conveyors are demountable into eight inch sections so that they can easily be carried from one location to another. Write for complete details today.

BERLIN CHAPMAN CO.

BERLIN, WIS.

SINCE 1909

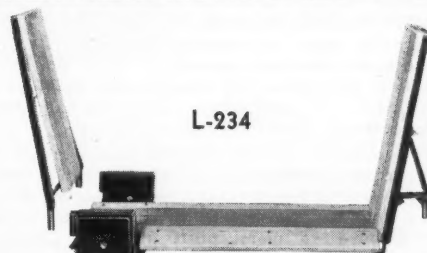
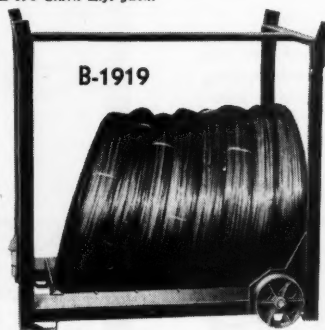
Clark WIRE COIL TRUCKS



B-1919 — Stacking type wire coil truck can be used with Clark Lift Jack for quick maneuvering. Stacks with a fork truck to 2 or more tiers high. Built to handle any size coils. Cleared deck. Steel or rubber tired wheels.

L-234 — Underslung platform. Removable end protected with hardwood strips for handling products such as grinding wheels, large gears, lead pipe coils, etc. Width, and length, and type of wheels to suit.

All units shown may be had with permanently attached front wheels and handle instead of detachable L-156 Clark Lift Jack.

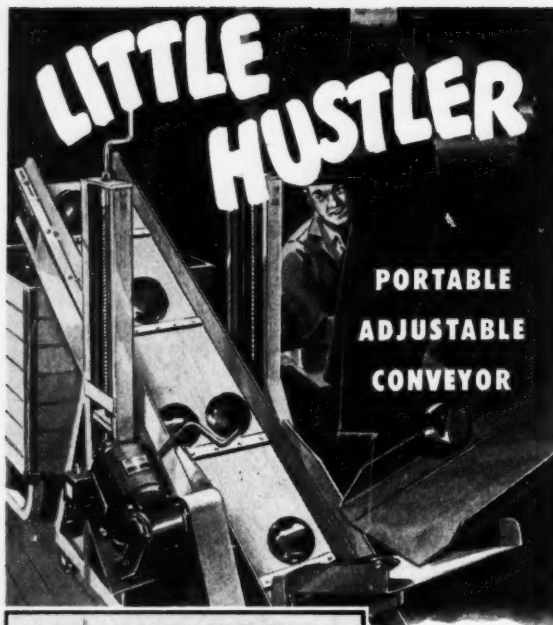


L-215 — One man loads this truck easier than two men load conventional truck. Loads from sides or end. Made to fit any size coils. Cleared deck. Steel or rubber tired wheels.

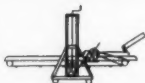
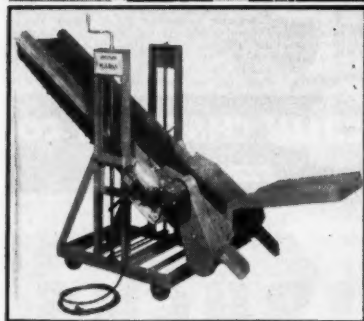


All Steel Welded Truck Co.
Rockford, Illinois

Circle No. 92 on Reader Service Card for more information



**PORTABLE
ADJUSTABLE
CONVEYOR**



Quickly spotted wherever needed . . . LITTLE HUSTLER conveyor offers an economical means of mechanizing your materials handling operations. Fully portable and instantly adjustable, this versatile unit provides maximum efficiency in applications where working heights and layouts are subject to frequent change.

This conveyor can be adjusted to any angle from horizontal to a maximum of 45° by means of a crank handle, and working height is regulated through a 30-inch range by double-screw center lift. It can handle small and medium sized metal parts including cut-offs, blanks, formed metal stampings, etc.

Features include all-steel welded construction, charging chute with positive trap, and two swivel and two stationary casters. Standard belting is neoprene-impregnated fabric. For applications involving excessive wear, or for the handling of borings, chips and turnings, MAY-FRAN hinged-steel conveyor belting can be furnished.

Power units are supplied to meet requirements.

Belt Widths	Conveyor Lengths in Ft.				
12 inches	4	6	8	10	12
18 inches		6	8	10	12
24 inches		6	8	10	12

• Write for catalog for complete price and specification information.



MAY-FRAN ENGINEERING, INC.

1691 CLARKSTONE ROAD • CLEVELAND 12, OHIO

Circle No. 93 on Reader Service Card for more information
110

length hexagon axles, cotter keyed to prevent turning in frame; tilt-type, full 360 movement. It has complete maneuverability on plain or slatted reefer decks, according to the manufacturer.

Frank L. Robinson Co.

Circle No. 197 on Reader Service Card for more information

Completely adjustable Airfoam-cushioned truck seats designed by The Goodyear Tire & Rubber Company should make your truck drivers' work a lot more comfortable. Good-year designed the seats to cut driver fatigue and discomfort. The units can be adjusted both fore and aft, to the proper seat angle, back angle and height to meet requirements of all drivers. Tubular framework for the seat is complemented by cushioning on seat and back to provide solid comfort and healthful support.



Goodyear Tire & Rubber Co.

Circle No. 198 on Reader Service Card for more information

NEW



**MODEL-H NOLAN
1-Man Car Door Opener**

New safety and efficiency features now make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before!

NEW improved balance assures automatic unlocking of pawl for chain stripping during door opening or closing operation.

NEW safetyhook swings 180 degrees; locks positively in place before pulling; cannot become detached.

NEW safetyhook with locking latch prevents accidental release when pulling.



**Opens Doors in
20 Seconds or Less!**

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

FREE LITERATURE
Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

\$29.50 F.O.B. BOWENSTON

THE NOLAN COMPANY
110 Pennsylvania Street • BOWENSTON, OHIO

Circle No. 94 on Reader Service Card for more information
SEPTEMBER, 1951 • FLOW

An addition to the Lewis-Shepard line of materials handling equipment has been announced. It's the



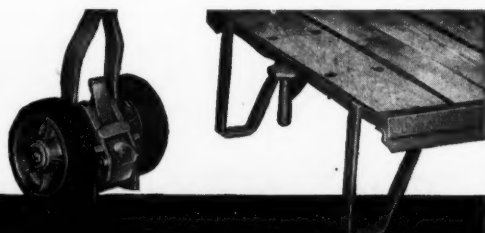
Working Height Lifter, a new piece of positioning equipment that keeps work at convenient working height. Idea of the equipment is to cut waste motion and eliminate operator fatigue. Lifting, stopping and lowering of the load are controlled by remote pedal switch which can be conveniently

located since they are mounted on a single steel plate at the end of a 15-foot long heavy duty rubber cord. The lifter is made in 4000 pounds capacity with a 42" lifting height.

Lewis-Shepard Products, Inc.

Circle No. 199 on Reader Service Card for more information

A new drop lock for its line of dock board and ramp combinations has been developed by Magline, Inc. Magline's new lock is incorporated into the ramp section of the unit and automatically drops into place



**AN IMPROVED
MATERIAL HANDLING SYSTEM!**

**LANCO
LIFT JACK SYSTEM**

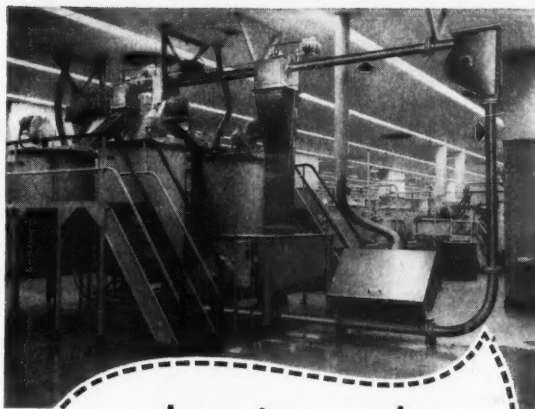
- ✓ Lower Your Equipment Cost
- ✓ Decrease Equipment Storage Space
- ✓ Increase Handling Speed



LANSING CO.
LANCO MATERIAL HANDLING EQUIPMENT

LANSING, MICHIGAN

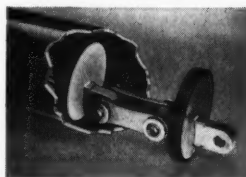
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FLOW • SEPTEMBER, 1951



where immaculate
cleanliness is vital
UPJOHN specifies

the amazingly versatile

Hapman
TUBULAR CONVEYORS



Here you can visualize the unusual versatility of Hapman Sealed-pin Chain Conveyors. First, note this installation photo from The Upjohn Company, Kalamazoo, Michigan. On a job where sanitation

is vital, Hapman Conveyors carry heavy pharmaceutical powders from one processing unit to another. The circuit is dust-proof and odor-confining.

Contrast with this the many applications of Hapman Conveyors which carry sludge from grinding wheels or quench tanks... chips from machine tools... coal and carpet tacks... ground glass and grain.

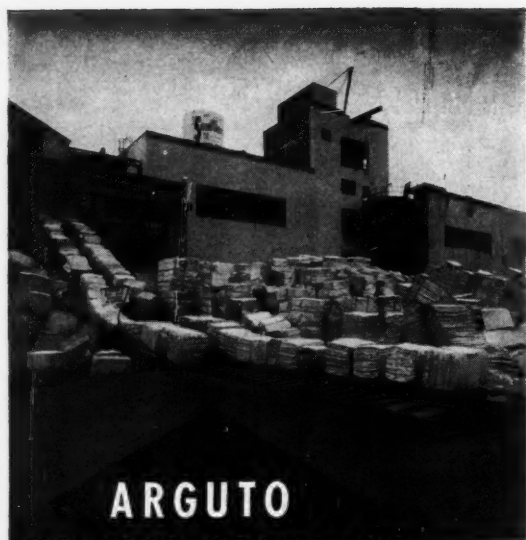
Then consider: To solve so many conveying problems — with such vastly varied requirements — Hapman Conveyors must offer outstanding advantages. And they do — in handling almost any kind of wet or dry flowable materials. Get full details as related to *your* problems.

Write for your copy of
Hapman Catalog F-951
for details and applications

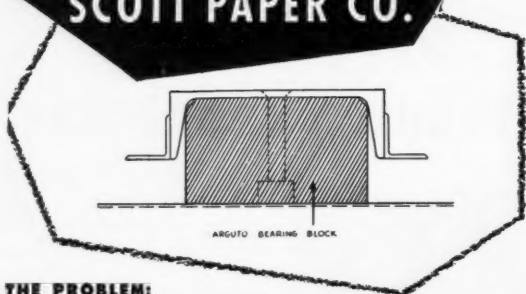


Hapman CONVEYORS, INC.
DIVISION HAPMAN-DUTTON COMPANY
KALAMAZOO MICHIGAN

Circle No. 96 on Reader Service Card for more information



**ARGUTO
OILLESS BEARINGS**
Solve Conveyor Problem
for
SCOTT PAPER CO.



ARGUTO BEARING BLOCK

THE PROBLEM:

Baled pulp weighing 400 lbs. (800 lbs. when wet) is dropped on the loading end of the apron conveyor shown. Each apron flight must be supported to take this impact load. For all-weather service—rain, heat, cold, pulp lint, friction—a bearing surface is required between the flights and the rail on which they ride, for smooth operation.

THE SOLUTION:


Alvey Conveyor Mfg. Co., St. Louis, Mo. specified Arguto Oilless Bearings—blocks of Arguto material are fastened so that they serve as an impact absorber and "slider" surface on the intermediate supporting rail. Operation under all conditions is highly efficient and requires no oiling, attention, or other maintenance.

... another typical example where Arguto Oilless Bearings provide the simple solution to bearing problems—on such diverse equipment as roller and screw conveyors, textile machinery, pumps, machine tools, food machinery, locks, propeller shafts...

Arguto Oilless Bearings are inexpensive, have extremely long service life, and are readily available to your specification.

SEND PRINTS, SAMPLES OR IDEAS FOR OUR RECOMMENDATION.

ARGUTO OILLESS BEARING CO.
149 BERKLEY STREET
PHILADELPHIA 44, PA.

20 years  without a drink

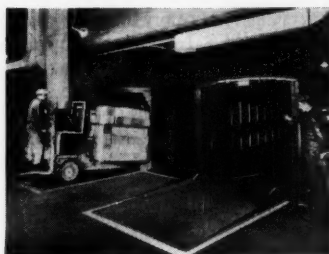
Circle No. 97 on Reader Service Card for more information
112

against the dock, securely holding the unit in position during loading operations. It provides positive lock action and eliminates any possibility of board slippage. Magline says.

Magline, Inc.

Circle No. 200 on Reader Service Card for more information

A new adjustable loading dock ramp features retractable supporting arms and a laterally adjustable



throwover bridge for greater utility and faster operation. The new ramp hinges into your loading dock. It's positioned by a hydraulic jack. The retractable supporting arms and laterally adjustable bridge

connect the hydraulic ramp to the truck and trailer. Platform automatically travels up or down to keep level with the truck's bed as truck springs are relieved or compressed during loading or unloading. Rotary Lift Company makes the ramp, says it will handle loads up to 10,000 lbs. It is operated by an electric power unit.

Rotary Lift Co.

Circle No. 201 on Reader Service Card for more information



**"George" ... THE ONE MAN IN SEVEN
WHO SAVES EVERY DAY ***

"George" the almost automatic tote box hauler saves effort, strains and time. Hook engages box handle, forward pull of truck handle guides boxes over bevel edge onto upper truck rollers, holds load in position. Lower rollers move truck to destination, easily. Save every day... "buy George", by the dozen. Priced very reasonably... long service life.



*With apologies to you-know-who

Write for free Folder L
ROLOCK Incorporated
Fairfield, Connecticut

LET "George" DO IT

3RG51

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SEPTEMBER, 1951 • FLOW

Circle No. 61 on Reader Service Card for more information

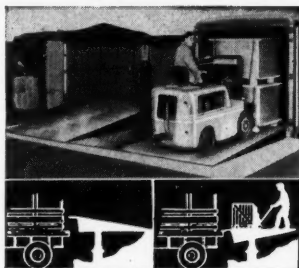
New Hydraulic Gang Plank

Speeds Loading 50%

Globe Hoist has come through with a most effective "aspirin" for your loading headaches. It is a new hydraulic ramp that speeds up loading or unloading by 50% with a corresponding cut in time and labor costs.

When a truck backs up to your dock, pressure on a button raises or lowers the ramp. A sturdy "lip" rests firmly on the truck bed. The ramp is self-leveling and "rides" with the truck as the springs flex.

This latest Globe Self-Leveling Ramp operates by air, air-oil, or motor pump, and is simply bolted on a load pad, thus requiring no excavation. It is easy to install. Quickly pays for itself.



No excavation required for installation.

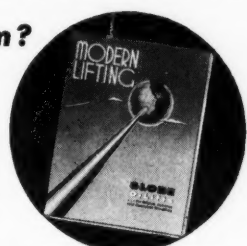
Got a Lifting Problem?

GLOBE

has the answer

Muscle is the world's most wasteful lifting power. A Globe OILIFT will do it cheaper and better.

Write today for "Modern Lifting." It is full of interesting information on Self-Leveling Ramps, Machine Loading Lifts, Industrial Truck Service Lifts, Production Lifts, etc.



Write for Bulletin F-300

GLOBE HOIST COMPANY • 1000 E. Mermaid Lane, Philadelphia 18, Pa.
(Factories at Des Moines, Iowa & Philadelphia, Pa.)

WILCO PALLETS

"A TRADE MARK YOU CAN TRUST"



"WILCO" MEANS BETTER PALLETS

Why not try them in your plant?

WILLIFORD MFG. CO.

Box 6095-F, Buntyn Station
MEMPHIS 11, TENNESSEE

Circle No. 62 on Reader Service Card for more information
FLOW • SEPTEMBER, 1951

Use Self-Dumping Containers

MORE

Material Handling

50% Less Time



WITH

ROURA Self-Dumping HOPPERS

—they pay for themselves



**Only ROURA Has the Exclusive
(PATENTED) Instant Release Handle**

Handling wet or dry, hot or cold, bulky materials quickly and easily, the ROURA is simple to operate—only one man is required for distributing and unloading—and he does this in much less time than ordinarily required under old-fashioned manual methods. Thousands of Roura Hoppers (which fit any standard fork or platform lift truck) are in constant daily operation, serving and saving for such firms as Owens-Illinois Glass, Corning Glass, National Fireproofing, General Motors, Ford, Chrysler, American Brake Shoe, General Electric, Westinghouse, Western Electric, American Steel Foundries, International Harvester, John Deere, etc.

By a simple lift of the exclusive release handle, the ROURA HOPPER dumps, rights and locks itself securely. Sizes— $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{2}$ and 2 cubic yards; the ROURA HOPPER can also be designed for flat trucks and in other sizes to meet specifications. Also, it can be equipped with special flanges that permit stacking to desired tiers for storage or future distribution of materials—conserving valuable floor space. Priced below all competition, the ROURA will quickly pay for itself many times over.

—Can Be Coated With Acid-Resistant Paints

Write today for detailed brochure, "In Dollars & Sense."

ROURA IRON WORKS, Inc.

1411 Woodland Ave.

Detroit 11, Mich.

Circle No. 106 on Reader Service Card for more information

Circle No. 102 on Reader Service Card for more information



LET BIG JOE DO IT!

Ideal for stacking drums or loading and unloading heavy, bulky items from trucks. The Big Joe Lift has a heavy-duty hydraulic unit for fast action, and comes equipped with extension plates and a safety brake at no extra charge.

IT'S NEW

- Efficient
- Indestructible
- Economical
- Indispensable

All Purpose Lift—Model 14
Capacity—750 pounds
Lifting Height—52 inches
Price—\$236.50 FOB Chicago



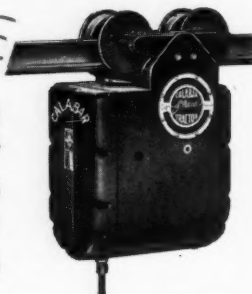
For free bulletin write or call. . .

BIG JOE MANUFACTURING CO.

184 NO. FRANKLIN ST. • CHICAGO 6, ILLINOIS

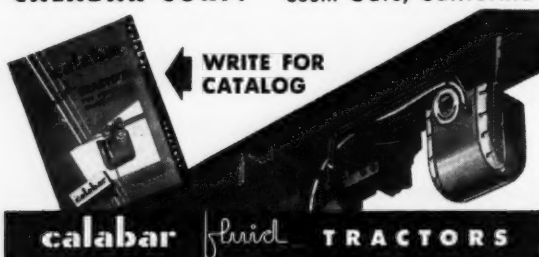
fluid POWER

FOR CRANES
HOISTS AND
MONORAILS



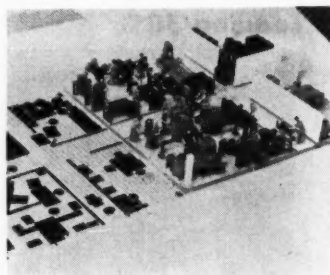
Propel loads up to 5 tons on monorails or cranes with the compact Calabar fluid Tractor. It travels at speeds ranging from 50 to 250 FPM . . . is applicable to flat or tapered track from 2" to 6 1/4" . . . starts smoothly without jerking or swinging the load . . . is practical on curves and inclines. Wearing parts are totally enclosed and operate in oil bath. Pendant push-button controlled. Built in 1/2 & 3/4 H P sizes. Dealers everywhere.

CALABAR CORP. South Gate, California



Circle No. 103 on Reader Service Card for more information

A complete method for making blueprints or Ozalid prints directly from its three-dimensional



layouts has been developed by Visual Planning Equipment Company, Inc. Visual calls the idea its "Repro - Templet System." A photographic film templet, coated with a pressure-sensitive cement, is now furnished to match each piece in the model layout. Once the layout is complete, the templates, affixed to a film grid sheet, become the master from which you make the prints you need.

Visual Planning Equip. Co., Inc.

Circle No. 206 on Reader Service Card for more information

Systematic handling of your product during assembly, inspection, sorting, order-packing and other operation is what the Rapistan Table-Veyor was designed for. The Table-Veyor is a horizontal belt conveyor whose length can be changed from 10 up to 60 feet by adding or removing 5-foot sections. Comes in widths of 10, 12, 16, 18 or 20 inches.

Rapids-Standard Co., Inc.

Circle No. 207 on Reader Service Card for more information



GRIPPER WOVEN WIRE SLINGS

SIMPLIFY ANY LIFTING JOB

Easier to use—Cross-woven wire construction eliminates kinking and tangling, provides tight grip even around small radius bends. Wide, flat surface gives more stable load balance, minimizes crushing effect on tubing or similar parts.

Safer to use—Every sling pretested to twice rated capacity before shipment. Cross-woven construction reduces flexure of individual wires, thus lessens metal fatigue and provides longer life. Specially tempered steel handles adjustable for both choke and basket hitch.

SEE YOUR DISTRIBUTOR FOR FULL DETAILS. Or, write direct for free Technical Data File, sending name of nearest distributor.

The Cambridge Wire Cloth Co.

Dept. W • Cambridge 9, Md.



WIRE CLOTH	METAL CONVEYOR BELTS	SPECIAL METAL FABRICATIONS
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OFFICES IN PRINCIPAL INDUSTRIAL CITIES

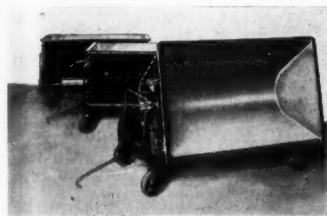
See "Belling—Mechanical" in your Classified Telephone Directory.

Circle No. 104 on Reader Service Card for more information

DISTRIBUTORS:

Write today for full details . . . on available territories, terms, sales assistance, etc.

Any dry material can be handled in the new side-dumping shop trucks made by The Klaas Machine & Manufacturing Company.



The truck is 36 inches wide, 140 inches high

The side-dump feature makes it easy to dispose of machine chips and scrap. You can pull the trucks by hand or with powered vehicles, singly or in trains. Capacity is about one cubic

and 6 feet long. Other sizes can be furnished, if you need them.

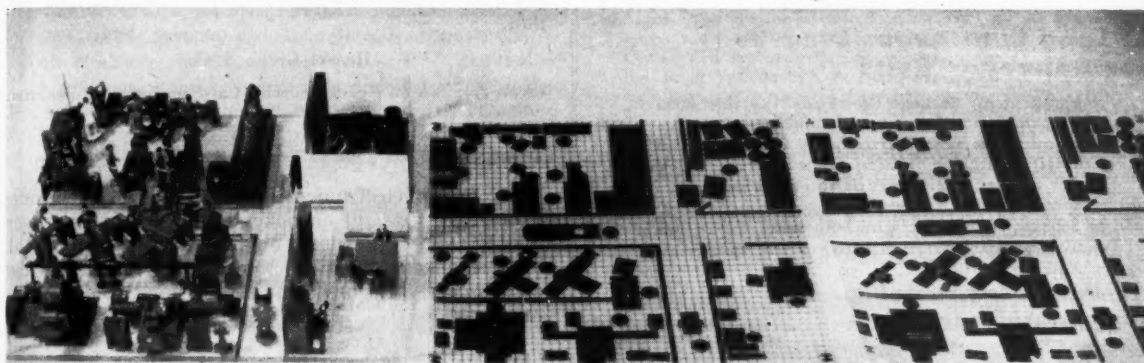
The Klaas Machine & Mfg. Co.

Circle No. 202 on Reader Service Card for more information

Just remove six nuts from the Thurman portable truck scale and you can move it from one place to another in minutes. No adjustments are necessary. Extra large steel bases support the scale; no pits or concrete footings are needed. The scale can be truck-loaded with a light crane or winch. Special front-end loading eyes are provided for winch loading.

Thurman Machine Co.

Circle No. 203 on Reader Service Card for more information



1. THE MODEL

2. THE GRID

3. FINAL PRINT

"VISUAL'S" Repro-Templet System Eliminates Layout Drawings...

The only complete 3-dimensional system in the world that provides—

1. Exactly detailed lucite buildings, built specifically to print.
2. Each and every piece of your manufacturing equipment, exactly in 1/4" scale.
3. Repro-templets, which enable the user to

SHORT OF ENGINEERS?
USE "VISUAL"

secure complete, detailed, final prints directly from the model layout.

As a packaged method. (Patent applied for.) Case histories prove that non-technical personnel can now produce complete layout prints in 1/20th the time formerly required. 100,000 square feet . . . completely detailed as to building, all equipment, and repro-templets . . . @ 8c per square foot. Delivery—30 days.

WRITE TODAY FOR BROCHURE, PRICES, ETC.

"VISUAL" PLANNING EQUIPMENT CO., INC.

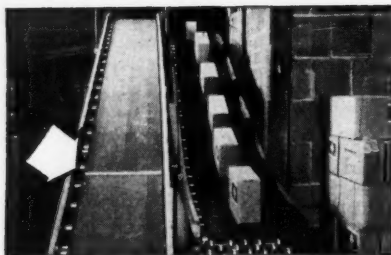
DEPT. F., OAKMONT (ALLEGHENY CO.), PA.

Circle No. 107 on Reader Service Card for more information

Circle No. 108 on Reader Service Card for more information

ALLIGATOR

CONVEYOR BELT LACING



Every
Tooth
A Vise*

**in Long Continuous Lengths
for Conveyor Belts**

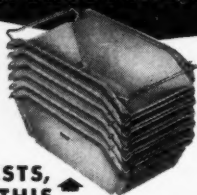
- ★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to 5/8" thick—and any width.

**Order from Your Supply House. Ask for Bulletin A-60.
FLEXIBLE STEEL LACING CO. 4702 Lexington St., Chicago 44, Ill.**

JUST A HAMMER TO APPLY IT

*Deliveries start
this month on the new
larger size* **NESTIER**

• MORE THAN JUST A NEW
MATERIALS HANDLING BOX—IT'S A
NEW PRODUCTION LINE TECHNIQUE.



**IT NESTS,
LIKE THIS**

Bails are swung out. Entire weight of each unit is borne by bails of unit below it. No telescoping, no jamming or sticking.

IT TIERS, LIKE THIS

Bails are swung in, locking the units together, forming a completely rigid stack. Parts in all boxes are visible, can be reached from either end.

TWO No. 175—18 1/4" long

SIZES No. 220—22 1/4" long

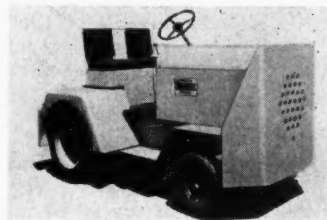
Catalog and price list on request.

NESTIER

Metal Specialties Division
THE CHAS. WM. DOEPKE MFG. CO., Inc.
ROSSMOYNE, OHIO

Circle No. 109 on Reader Service Card for more information

Only 66" high, the Model 50 Unitow industrial tractor was designed by Hensel Green & Company to



fill the need for a powerful tractor of minimum dimensions (102" long x 65" wide) with short (118") turning radius that could navigate narrow industrial aisles, shipping docks and other crowded areas.

The tractor is equipped with dual pneumatic tractor tread drive wheels with smaller pneumatic tired front wheels for short turning and smooth navigating over poor pavement and rough railroad yard crossings. It tows 100 tons on level ground with 5000 lb. drawbar pull.

Hensel Green & Co.

Circle No. 208 on Reader Service Card for more information

By use of electronic cells, the Ametron Electronic scale records weight on tickets, tapes or even a ledger remote from the scale. Your weigh master sitting at his station can read the weight of shipments being made in the yards down the track using this new scale.

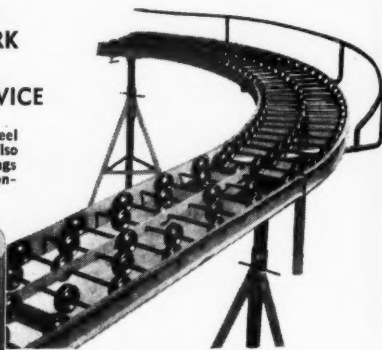
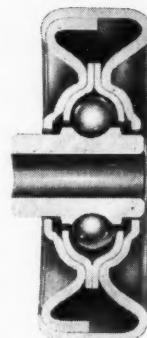
Streeter-Amet Co.

Circle No. 209 on Reader Service Card for more information

METZGAR WHEEL & ROLLER CONVEYORS

**BUILT FOR
HARD WORK
and
LONG SERVICE**

Complete Wheel
Assembly also
used as Bearings
in Roller Con-
veyor.



**100% OPERATING EFFICIENCY
BALL-BEARING THROUGHOUT**

Metzgar construction features wheels and rollers that spin on full 1/4" steel balls (Hoover or equal) in the famous Metzgar Labyrinth Ball Race. Factory-lubricated for life. Get most for your money in a Metzgar "Maintenance-Proof" Conveyor.

**WRITE FOR
FOLDER NO. 1251**



METZGAR CO.

423 Douglas N. W.

GRAND RAPIDS 4, MICH.

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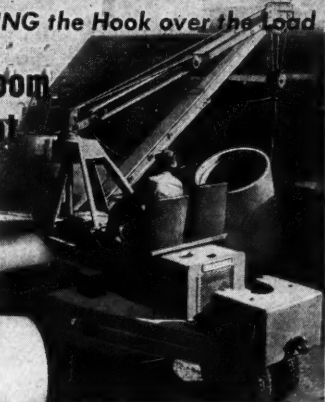
Circle No. 111 on Reader Service Card for more information

KRANE KAR Can Do This Job

Because it can SWING the Hook over the Load

Non-Swing Boom Cranes Cannot

In tight quarters, 10 jobs inside and outside plant must be handled at SIDES as well as front . . . jobs KRANE KAR can do, non-swing boom cranes cannot. Compare before you buy.



FEATURES: Stability without stabilizers; 100% vision in all directions; load and boom operations, and crane travel, performed simultaneously or independently; automatic limit stops for all crane operations; automatic braking of load and boom; no tail swing and no part of crane passes over operator. KRANE KAR will transport any load it can lift.

Gas or Diesel. 9 to 37 ft. booms or adjustable telescopic booms. Electric magnet, clamshell bucket, and other accessories available.

THE ORIGINAL SWING-BOOM MOBILE CRANE
WITH FRONT-WHEEL DRIVE AND REAR-WHEEL STEER
1½, 2½, 5, AND 10 TON CAPACITIES

Write for
Bulletin No. 79

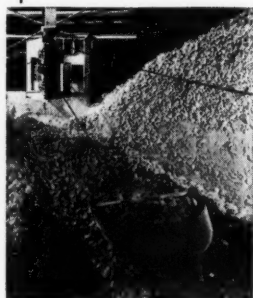
KRANE KAR

SILENT HOIST & CRANE CO., 888 63rd ST., BKLYN 20, N.Y.

bulk storage simplified

with a

SAUERMAN SCRAPER



At mills, mines and factories, Sauerman Power Drag Scrapers are setting records for labor-saving efficiency in stockpiling both raw and processed materials in open areas or inside buildings.

Sauerman equipment has the flexibility to meet the exact requirements of any stockpiling problem—large or small. It is mechanically simple, easily operated by any mechanic, seldom needs repairs, cost is reasonable.

In open storage of coal, it offers the important advantage of building a compact pile that is safe from spontaneous combustion.

Made in a wide range of sizes with handling capacities from 10 to 500 tons an hour.

Picture shows a 1 cu. yd. Sauerman scraper machine, powered by a 40 h.p. motor, that operates in a storage building 320' long, 80' wide, 45' high, storing and reclaiming gypsum which is delivered into the building by an overhead shuttle conveyor. Scraper spreads the rock from wall to wall and reclaims at rate of 400 tons a day to floor hopper that feeds into the adjoining crusher house.

WRITE Today for New Bulk Storage Catalog. Pictures, diagrams and technical information fill the 32 pages of this useful catalog. A free copy is yours for the asking.

SAUERMAN BROS. INC.

540 S. Clinton St., Chicago 7

Circle No. 112 on Reader Service Card for more information

Chem-Board Tote Boxes



HELP BUILD AIRCRAFT

Many plants building the planes needed to make the nation strong keep materials, parts and sub-assemblies flowing to production lines in thousands of Convoy Chem-Board Tote Boxes. The nesting boxes illustrated are stored in minimum space while awaiting new loads.

Chem-Board is made of corrugated fibre-board, chemically impregnated by Convoy's exclusive process. It is flint hard and rock strong. It is not weakened by moisture. It is impervious to machine oils. Convoy Tote Boxes cost and weigh 50% to 60% less than steel.

The lightness, toughness and economy of Chem-Board Tote Boxes are unmatched. Tell us the style you use . . . we'll send a free production sample from the next run for you to test. As a guide for present and future availability, our current production capacity is reserved for the unprecedented demands from old customers and "DO" orders. Orders rated DO-MRO are acceptable. Write today.

Standard and Custom-made
Nesting—Stacking—Vertical
CHEM BOARD TOTE BOXES

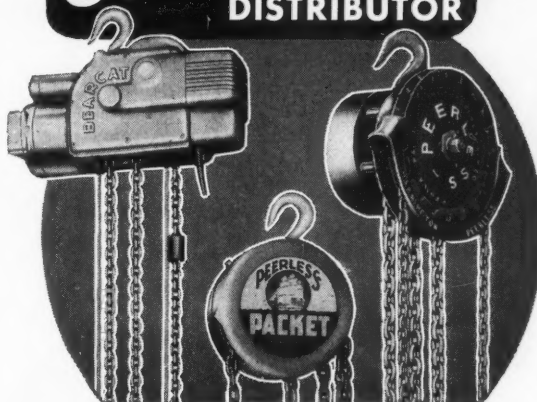
CONVOY, INC.

P.O. Station B, Box 216-F
CANTON 6, OHIO

YOUR

Harrington

DISTRIBUTOR



carries a complete line of time-saving and labor-aiding hoist products. He'll be glad to help you with your materials handling problems. Write for your local Harrington Distributor's name and a copy of our Condensed Catalog. Of course, there is no obligation.

THE HARRINGTON COMPANY

1638 W. CALLOWHILL ST.
PHILA. 30, PENNA.

HOIST MANUFACTURERS SINCE 1876

Circle No. 114 on Reader Service Card for more information

Circle No. 113 on Reader Service Card for more information
FLOW • SEPTEMBER, 1951

Circle No. 115 on Reader Service Card for more information

FASTER LOADING and UNLOADING of Trucks, Trailers and Freight Cars



1 Place Dolly near door or on tailgate.



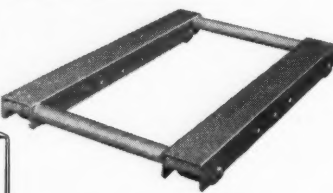
2 Set loaded pallet on Dolly with Fork Truck.



3 Roll to proper place for unloading.

Use of Olson Pallet Dollies to move loaded pallets inside Trucks, Trailers, and Freight Cars speeds up loading and unloading, avoids tie-up of fork trucks, eliminates laborious toting and increases capacity of docks as well as shipping and receiving departments.

Sizes and types for all requirements. Send for literature.



Olson No. 703-1 Pallet Dolly carries a ton, yet weighs only 36 pounds. Requires little space when carried in truck or trailer.

SAMUEL OLSON MFG. CO., INC.

2426 Bloomingdale Ave.—Chicago 47, Ill.

Serving
INDUSTRY
SINCE 1900

STEEL SHOP BOXES STACKING TYPE

MODEL NO. 800
OPEN END TYPE
Heavy Gauge Metal
Construction
Baked Enamel Finish

MODEL NO. 805
CLOSED END TYPE
Heavy Gauge Metal
Construction
Baked Enamel Finish

Now Available for Prompt Delivery!

SPECIAL SIZES AVAILABLE

DEALER INQUIRIES INVITED

MARKLIN SUPPLY CO.
3640 WEST OGDEN AVENUE • CHICAGO 23, ILLINOIS

Circle No. 116 on Reader Service Card for more information
118

Wire carriers of basket type developed by Mid-West Products Company, Inc., are designed to suspend the part to be carried in a manner that permits fast easy handling, protect critical surfaces, eliminates removal from carrier for washing or degreasing and affords convenient systematic visual inventory control for machined parts. The carriers can be handled by overhead conveyors; gravity, power belt or roller conveyors; hand truck or manually. They stack to a height of five or six feet even though of different dimensions due to an integral handle-runner and nesting feature.

Mid-West Products Co.

Circle No. 210 on Reader Service Card for more information

You can make a stamp for your marking jobs in a matter of a few minutes when you use Print-O-Stamp. Print-O-Stamp is a new hand stamp device for printing labels in volume quantity. You just type a stencil, snap it on and you're ready to go. The device prints on labels, packages, boxes, tags, cartons. Ink dries fast, won't smear and is waterproof. You can use Print-O-Stamp to print special headings, inventory marking.

Print-O-Matic Co., Inc.

Circle No. 211 on Reader Service Card for more information

NO TRAFFIC TIE-UP!

...WHEN YOU REPAIR WITH...

QUICK-FLOOR

● You can make a complete, permanent, heavy duty concrete floor patch (or covering) in one minute and is ready to use when placed. Placing or patching causes no delay or interference to traffic. The rule is place, pack, and use without cutting or mixing.



1 FOOT PATCH A MINUTE

● The continuous use of Quick Floor since '38 by many people (some over 300 drums), spells satisfaction.

● We guarantee satisfaction. Service as required. Write for new folder.

dura-tred Co.

Manufacturers since 1938

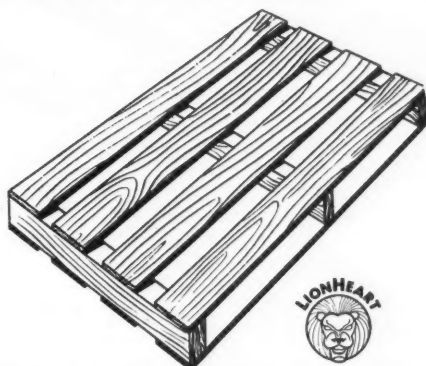
351 N. Central Park Blvd., Chicago 24, Ill.

Circle No. 117 on Reader Service Card for more information
SEPTEMBER, 1951 • FLOW

the manufacturer, the unit is specially designed for the small-parts customer, cutting handling from receiving room to work stations. Units shipped in these containers remain in the original container until actually used up. Inventory can be taken in "short order" by means of a running record of the contents that can be kept on a label on the front of the container.

Circle No. 212 on Reader Service Card for more information

HANDLE MORE MATERIALS AT LOWER COST...



Quality made hardwood pallets are designed to meet your material handling requirements whatever the size, shape or product. All sales made direct through company representative. Save the middle man profit. Also pallet boxes, skids, crates, and miscellaneous wooden packaging material.

L & H WOOD MFG. CO.
FARMINGTON, MICHIGAN

DETECTO SCALES

SPEED SCALE
For increased production at lower cost! One operator with one Speed Scale does as much as two operators with ordinary scales. Sturdy, precision built, super-accurate. Ends overweight losses.

Write for Literature

DETECTO • SCALES • INC.

MAKERS OF FINE SCALES SINCE 1900

549W PARK AVENUE • BROOKLYN 5, NEW YORK

SCALE ENGINEERS IN ALL PRINCIPAL CITIES

FLOW • SEPTEMBER, 1951

roll it

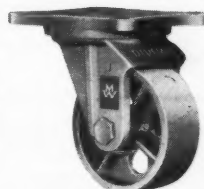
**better...
longer...
at lower cost
on**

DIVINE truck wheels and casters



**Write For
Free Data Book**

How to select and install truck wheels and casters for greater service and economy. 44 pages of facts you should know before you buy. Write for Catalog No. 25.

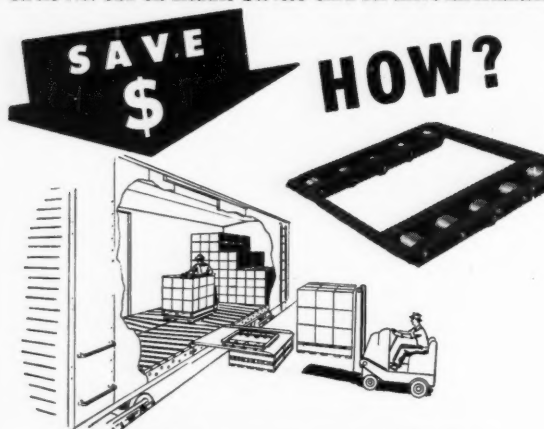


MID WATE®
Series No. 34,
double ball
bearing
swivel caster.

Divine MID WATE swivel and rigid casters are designed for medium-heavy duty—yet have a high safety factor for overloads. Alloy-iron construction—fully adjustable—all parts easily renewed.

Circle No. 120 on Reader Service Card for more information

Circle No. 121 on Reader Service Card for more information



ACE "REEFER" PALLET ROLLERS

Speed up tonnage • Load and unload Reefers with slatted decks—Quickly—Easily—Economically • Time and field proven • Write for Engineering Bulletin No. 103.

PATENTS PENDING

DISTRIBUTORSHIPS AVAILABLE

FRANK L. ROBINSON COMPANY

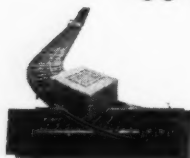
MANUFACTURERS

LATHAM SQUARE BLDG. • OAKLAND 12, CALIF.



SPEEDY sez:

"SPEEDWAYS"
low cost CONVEYORS
GO TO WORK in a HURRY!"



SPEEDWAYS Gravity Wheel Conveyors
—light, sturdy, portable—quickly taken down, moved, set up where needed—without tools. Handle up to 600 lbs. distributed load.



SPEEDWAYS Gravity Roller Conveyors
—best for "hard-to-handle" items like kegs, baskets, milk cans. Handle loads wider than conveyor. Mounted on stands or casters.



SPEEDBELT Portable Power "Boosters"
—for loading, unloading, stacking, etc. Hand crank for quick, easy height adjustment. Three sizes.

FREE—Helpful bulletin "How to Order Correct Size Conveyor." Also full information on SPEEDWAYS models. Write us today.

SPEEDWAYS Conveyors, Inc.

1242 Niagara St., Buffalo 13, N. Y.

Also Mfd. in Canada; Union of So. Africa

Circle No. 122 on Reader Service Card for more information

120

A new motor-generator type battery charger, designed to permit mounting on balconies or shelves to save valuable floor space has been developed by General Electric. The unit accommodates lead-acid batteries of 6-19 cells and nickel-iron-alkaline batteries of 10-30 cells. It's fully automatic; you just plug it in and set the timer. Automatic controls do the rest. Voltage and current are adjustable. The single-circuit equipment operates on 3-phase, 60-cycle, a-c power and has generator-overload and motor-overload protection to guard against excessive currents.

General Electric Co.

Circle No. 213 on Reader Service Card for more information

No adjustment for truck bed height is necessary when you use the Penco magnesium ramp. The ramp is built to accommodate trucks that are either higher or lower than the dock level and has a ramp stop that holds the ramp securely in position. Trucks can back to within three inches of the dock. Penco Engineering Company makes the ramp of light-weight Magnesium safety tread plate. Sizes range from 42" wide and 36" long to 48" wide and 60" long. Capacities run from 1,000 to 5,000 pounds.

Penco Engineering Co.

Circle No. 214 on Reader Service Card for more information



Store and handle bulk materials the low cost, modern MARIETTA way.

Chemicals, grains, fertilizers, wood chips, coal, sand, gravel . . . any bulk material that requires safe, low-cost storing and handling, needs Marietta protection.

Marietta Air-Cell concrete stave construction gives you tanks that are wind and fire proof . . . air-tight . . . permanent . . . maintenance-free . . . keep valuable contents DRY and SAFE . . . reduce waste.

Each Marietta storage system is designed to solve your particular storing and handling problem. Our trained erection specialists will quickly turn these designs into tanks ready for filling . . . give you low cost, efficient storage facilities.

Write or wire for full details.

the MARIETTA CONCRETE corporation

MARIETTA, OHIO

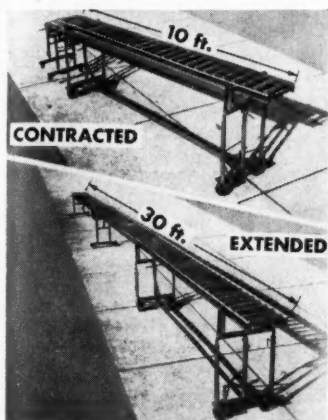
Branch Offices: Race Rd. & Pulaski Hwy., Baltimore, Md., Box 1575, Charlotte, N. C.

Circle No. 123 on Reader Service Card for more information

SEPTEMBER, 1951 • FLOW

FLOW

A new roller type conveyor supplements Wilkie Company's skate wheel model. Wilkie recommends the roller conveyor for handling bundles and other objects that don't have a rigid, flat bottom.



Like Wilkie's skate wheel conveyor, the new model is telescopic; it can easily be pulled out or pushed in to follow your load for quick pick-up and delivery. It's supplied in twelve and eighteen inch widths. Nine different lengths are available.

Wilkie Co.

Circle No. 215 on Reader Service Card

Safety, convenience and simplicity are three things that make Coffing Hoist Company proud of

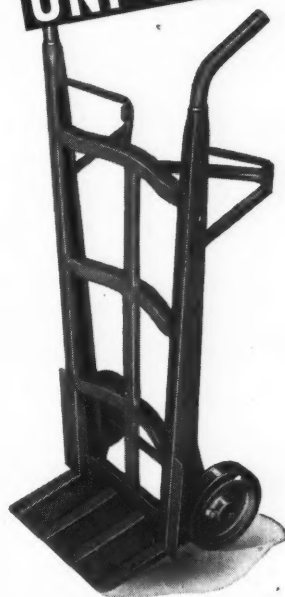


its new Hoist-Binder. Since this new load binder works on the ratchet hoist principle, it will take up or slack off a load chain any amount up to a full 20 1/2 inches—or more if a longer chain is used in the binder.

Coffing Hoist Co.

Circle No. 216 on Reader Service Card

HALLOWELL UNI-TRUK



HEAVY-DUTY TRUCKS FOR TOUGH JOBS

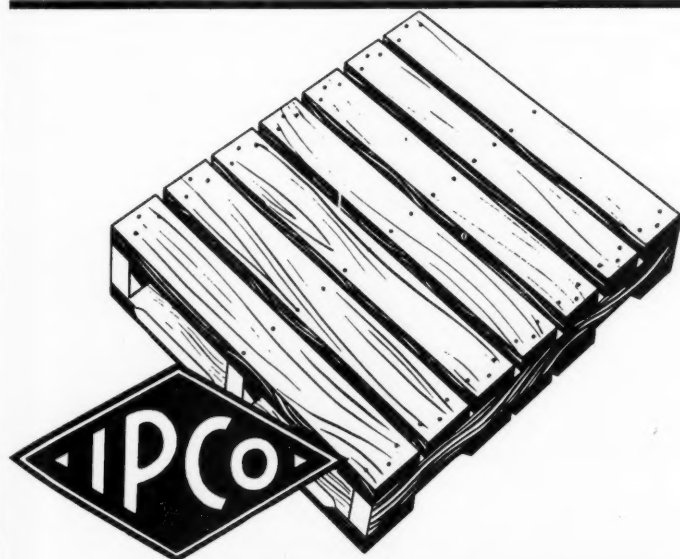
Tough jobs are easy with these sturdy, 2-wheel HALLOWELL Trucks. All-welded, all-steel construction minimizes weight (heavier model #738 weighs only 50 lbs.), cuts maintenance costs, lengthens truck life. Ribbed, angle-form steel nose carries heavier pay loads without bending, reinforces "UNI-TRUK" at point of severest stress. Two popular models: #738 with 8" wheels and braced legs; #734 with 6" wheels, no legs.

Write for Bulletin 718-2.

HALLOWELL®
MATERIALS HANDLING EQUIPMENT

—SPS—

STANDARD PRESSED STEEL CO.
JENKINTOWN 49, PENNSYLVANIA
Circle No. 125 on Reader Service Card



• Ask IPCO pallet engineers for practical assistance on your palletization problems. Write today for detailed information. All Standard Type Pallets. Give details of your problem.

Mills strategically located for service in the East.

INDUSTRIAL PALLET CO., INC.
PALLETES EXCLUSIVELY SINCE 1941

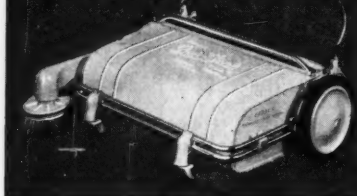
1619 WOOLWORTH BLDG. • NEW YORK 7, N. Y. • TELEPHONE BARCLAY 7-8446-7

Circle No. 124 on Reader Service Card for more information

SEPTEMBER, 1951

**UP TO 400%
FASTER**

**THAN MAN-WASTING
PUSHBROOM SWEEPING**



SAVES \$2100 YEARLY

"71,256 sq. ft. cleaned in 8 hours against former method of 16 hours. In other areas, formerly swept entirely by pushbroom, savings run up to 76%." (Food manufacturer.)

SAVES 75%

"Picks up forge dust, iron scale, borings, punchings, small scraps. Savings are 75% over hand sweeping." (Building material mfr.)

• • • • •

Picture for a moment a Parker Floor Sweeper in your plant.

One man can easily sweep 12-15,000 sq. ft. in an hour's time—and even more if the area is unobstructed. In one operation, dirt and debris of all types are both swept and collected. Emptying is a matter of seconds.

Now contrast this with pushbroom sweeping. Granted that a broom may be necessary in some hard-to-reach spots, but when used 100% of the time, think of the wasted manpower!

Yes, a Parker Sweeper soon pays for itself—often in a matter of months. Send for our Parker Sweeper fact file.

PARKER
**INDUSTRIAL
FLOOR SWEEPERS**

Send for our
Fact File



The Parker Sweeper Co.,
13 Bechtel Ave., Springfield 99, Ohio

Without obligation, I would like to look over
more information on your floor sweeper.

Name _____
Firm _____
Street _____
City _____ State _____

Circle No. 126 on Reader Service Card
122

Easier steering is the aim of the improved wheel design on the Model YT-40 (4,000 pounds

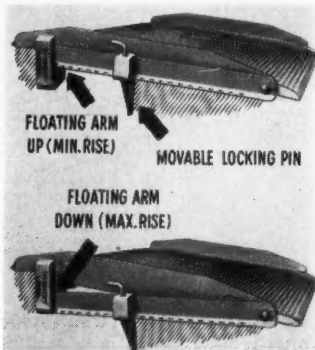


capacity) fork lift truck manufactured by the Hyster Company. All model YT-40 trucks now are being equipped with dual wheels instead of a single wheel on the steering trunnion. The new design has reduced the gear ratio in the steering mechanism from 31 to 1 to 20.7 to 1. Even when the truck stands still, Hyster says, the trunnion can be moved easily.

Hyster Co.

Circle No. 217 on Reader Service Card

Development of a new, improved self-leveling locking device and floating arm for its one-man bridge ramp has been announced by Elizabeth Iron Works, Inc. Now, locking pins are an integral part of the floating arm locking bar which travels back and forth in its own housing along the floating arm and secures the ramp by butting up firmly against the loading plat-



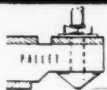
form. The patented sleeve permits the floating arms to rest flat on the lowest or highest levels for 90 angle bearing of the locking device against the platform.

Elizabeth Iron Works, Inc.

Circle No. 218 on Reader Service Card

STORE CRUSHABLE and ODD-SHAPE MATERIALS

with the *Flexible* **PALTIER**
Self-Aligning Stacking Pallet



Palletizing OVERSTUFFED FURNITURE—now easily accomplished with the Flexible PALTIER.



RECEIVING CONE ASSEMBLY.



VERTICAL SUPPORT. Electrically welded mechanical steel tubing. DIFFERENT LENGTHS OF VERTICAL SUPPORTS MAY BE USED WITH THE SAME PALLET FOR MORE FLEXIBLE AND EFFICIENT STORAGE.



END OF TUBE SWEDGED. HEX LOCK NUT. STEEL WASHER. REINFORCING SLEEVE. ALIGNMENT RING. MALE CONE, WELDED TO SLEEVE.

NOW practically ANYTHING can be palletized

Write for illustrated descriptive booklet.



THE PALTIER CORPORATION

1701 Kentucky Street, Michigan City, Indiana
DISTRIBUTORS IN PRINCIPAL CITIES

Circle No. 127 on Reader Service Card for more information
SEPTEMBER, 1951 • FLOW

Webbing straps equipped with instant-set, instant-release buckle grips have been developed by Gor-



don D. Brown & Associates. The straps are used to hold bulky equipment on dollies, hold odd-shaped items during assembly operations and for a raft of other tying jobs. They can be set in a jiffy to any degree of tension, released in seconds when they have to be. Once set, the buckle prevents slippage or backlash. Strap assemblies are sold in 1" 1½" and 2" widths.

Gordon D. Brown & Associates
Circle No. 219 on Reader Service Card

Features of the new Clipper electric battery-powered fork lift truck built by Clark Equipment Company include: increased speed; one ton capacity at 24-inch load center; fingertip directional lever; automatic acceleration. The directional control lever is mounted on the truck's steering column for selection of direction of travel and simultaneous engagement of first point-of-power. Clark says this makes the operator's work easier, gives him more maneuverability and faster getaway. The automatic acceleration idea cuts out jerking and the possibility of human error. Shifts from one point of power to another are timed automatically in accordance with torque requirements.

Clark Equipment Co.
Circle No. 220 on Reader Service Card

Take advantage of the special pre-publication price of only \$5.00 for the new FLOW DIRECTORY. See page 128 in this issue for more details.

Can You Use These?



PACKING SPACERS

- ★ CYLINDERS
- ★ BLOCKS
- ★ ROLLS (hard or soft)

Core Diameters:
1½, 2¼, 3, 4, 5 inches
Outside Diameters:
Up to 8 inches
Length of Rolls and Blocks:
From 1 to 48 inches

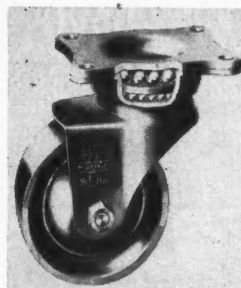
★ Used for the protection of various fragile and/or heavy articles in corrugated or wooden boxes...
Write for samples and prices.



CENTRAL FIBRE PRODUCTS CO., INC.
901 SOUTH FRONT STREET • QUINCY 2, ILLINOIS

Circle No. 128 on Reader Service Card for more information
FLOW • SEPTEMBER, 1951

A SAVING AT EVERY TURN



Darnell Casters

DEPENDABILITY,
AND QUALITY

Reduce floor and equipment wear to a minimum — increase employee efficiency with the casters that "always swivel and roll."

FREE Manual



DARNELL CORP. LTD.
LONG BEACH 4, CALIFORNIA

60 WALKER ST. NEW YORK 13, N. Y.
36 N. CLINTON, CHICAGO 6, ILL.

Circle No. 129 on Reader Service Card
123

Modernize with MAGCOA Magnesium DOCKBOARDS and cut materials handling costs!

- 1/4 THE WEIGHT OF STEEL of comparable size and strength
- Easy, safe, fast to handle
- Designed like a bridge for structural dependability
- Quarter round safety curbs
- Exclusive, built-in hand holds



Magcoa Dockboards made of magnesium, can be handled by one man without the aid of truck, chain or hoist. They're easier to approach and drive onto . . . rounded and tapered ends of safety curbs offer maximum turning radius. Magcoa Dockboards are built like a bridge with reinforcing floor members and all-welded construction.

They offer maximum safety and strength with minimum weight . . . in any size and any capacity to suit your special needs.

Representatives in All Principal Cities

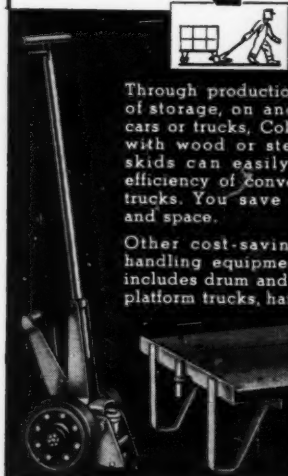


DIVISION OFFICES
30 Rockefeller Plaza,
New York 20
7657 Moline St.,
Houston
Russ Bldg.,
San Francisco 4
8922 W. 25th St.,
Los Angeles

MAGNESIUM COMPANY of AMERICA • East Chicago, Indiana

In Materials-Handling the Colson LIFT-JACK System

Lets 1 man do the work of 2

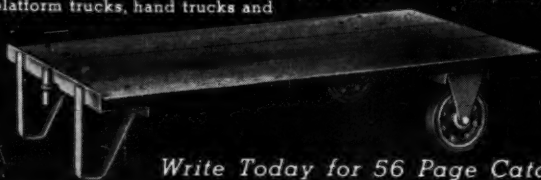


Through production, in and out of storage, on and off freight cars or trucks, Colson Lift-Jacks with wood or steel semi-live skids can easily double the efficiency of conventional hand trucks. You save time, money and space.

Other cost-saving materials-handling equipment by Colson includes drum and barrel trucks, platform trucks, hand trucks and

precision built roll-easy wheels and casters for every type of industrial application.

Why not consult a Colson engineer to see how up to date materials-handling equipment can speed up your operations and lower your costs. Write us or consult your phone book for the Colson Representative near you.



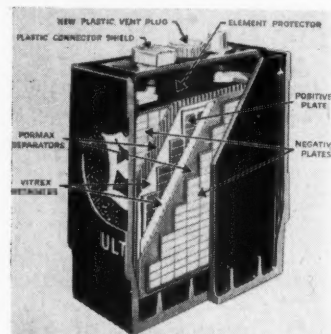
Write Today for 56 Page Catalog

THE COLSON CORPORATION
ELYRIA, OHIO

CASTERS LIFT-JACK SYSTEMS INDUSTRIAL TRUCKS

Circle No. 131 on Reader Service Card for more information

Biggest thing in automotive batteries in 40 years is what Electric Storage Battery calls its new Ultra Start. Test results on the new battery have been so good

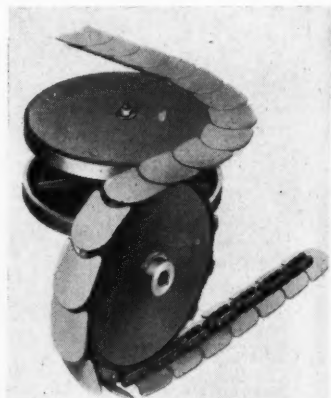


that Exide engineers won't predict its exact life span. But they do say that it should give many more years of service than any previous Exide model. There are four secrets to the Ultra Start's long life: Silvium (a new grid metal); a new type active material; a low specific gravity electrolyte; the Pormax plastic separator.

Electric Storage Battery Co.

Circle No. 221 on Reader Service Card

A new flat top conveyor which flexes in two planes—both horizontally and vertically—can be curved around corners with a radius of as little as 6 inches. Chain Belt Company makes it, calls it Rex Flextop. Designed primarily



for tip-free conveying of bottles, jars, packages or small parts, its biggest advantage of Flextop is its elimination of transfer points in the conveyor system. Flextop can be driven from one power source, eliminating the need for transmission parts at transfer points.

Chain Belt Co.

Circle No. 222 on Reader Service Card

Rates
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36" x 60"
fit skids.
Richmond

Two Clar
Lifting h
Four mon
The Kau
Toronto,

OPPORTUNITIES

USED EQUIPMENT MEN JOBS LINES

Rates: for "Positions Wanted" \$8.00 minimum, limit 25 words. For all other classifications \$10.00 minimum for 25 words; each additional word 25c. Boldface type or all capitals, \$12.00 minimum for 25 words, each additional word 35c. Box address counts as five words. All insertions payable in advance.

FOR SALE

Priced to sell: two Blaw Knox Hi-Boy 2-yd. concrete mixers mounted on 1948 F6 Ford trucks. Good appearance and in excellent running condition. Grayson Lumber Company, P.O. Box 1311, Birmingham, Ala. Phone 9-1131.

Bridge Cranes
Write-Wire-Phone
Arnold Hughes Company
765 Penobscot Bldg. Detroit, Michigan

100 36 x 72 Lewis-Shepard Semi-Live skids with steel wheels, condition excellent. 1 conveyor, adjustable, portable, 15" belt, approximate 12 ft. length, 220, 3 phase, 60 cycle current. Box 09251, FLOW.

13,000 light weight pine wood skids 46" x 32" with 7 1/2" truck opening. Solid top. All in excellent condition. Owner converting to pallet operation for new warehouse. Contact J. Crawford, 1501 Unity Street, Philadelphia 24, Pa.

770 feet of 4" "I" Overhead Monorail Conveyor No. 458 Heat Treated Chain, 495 two-wheel trolleys, ten 24" 90 degree Roller Turns. Sprocket Power Drive Unit. National Screw & Mfg. Co., Cleveland 4, Ohio. Phone: En. 1-2650, Ext. 322.

500 skid platforms, 39" x 48" x 7 1/2". 200 Truscon corrugated steel platforms, 36" x 60" x 11 1/2". Hand lift trucks to fit skids. C. B. Lathrop, 2910 N. Blvd., Richmond, Va., Tel. 4-6735.

Two Clark Yardlifts—4024. Lifting height—72". Four months old. New condition. The Kaul Clay Manufacturing Co., Toronto, Ohio.

HELP WANTED

Old established firm desires representatives for fabricated wood industrial items such as pallets, export boxes, crates, carblocking, etc. shipped in carload quantities from the South. Commission basis. Ideal for man selling related items of material handling equipment. Reply Box 09151, FLOW.

WANTED CONVEYOR DESIGN AND DEVELOPMENT ENGINEER

To develop standard line of portable conveyors. Permanent position with old-established Southern Ohio manufacturer. Excellent opportunity, congenial working conditions, employee benefits, etc. Send, in confidence, complete resume of experience and salary expected. Box 09451, FLOW.

**CUT YOUR SWEEPING
COSTS 75%...**

WITH **Wilshire**
POWER SWEEPER



Picks up everything from cigarette butts to pop bottles in one easy operation! Write today for dealer nearest you and **FREE on-Your-Job DEMONSTRATION.**

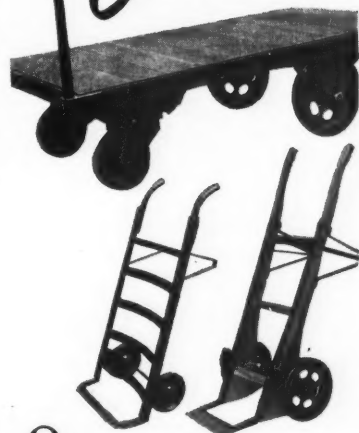
For dealer nearest you,
Write Dept. 8-9

Wilshire
POWER SWEEPER CO.
526 W. Chevy Chase Drive
Glendale 4, Calif.



Circle No. 132 on Reader Service Card

K&J for TRUCKS and Casters



One dependable source for 2 wheel trucks, platform trucks, trailers. Units for loads to 50 tons. Wood or steel construction. All accepted bearing, wheel, and caster combinations. Built with high overload factor for low maintenance.

Get the same dependable quality and value in K&J casters. All standard designs, bearings, wheels, 175 lbs. to 1 ton capacity. Write for details.



THE KILBOURNE & JACOBS MFG. CO.

Circle No. 133 on Reader Service Card

the best hand truck
in the land



Many hand trucks look like Wheel-Ezy
but none match its performance!

Wheel-Ezy®

Another **Rapistan**® Product

The **RAPIDS-STANDARD CO., INC.**
608 Rapistan Building, Grand Rapids, Michigan

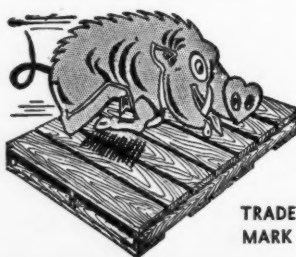
RAZORBACK PALLET

Sturdy, dependable construction insures their economy and dependability in service. **RAZORBACK** Pallets will save you dollars on repairs and fewer replacements.

Write us for details on **RAZORBACK** Brand collapsible boxes, separators, shipping panels, and trays.

Arkansas Pallet Co.

P. O. Box 794-A Phone 6474
PINE BLUFF, ARKANSAS



HELP WANTED

Metropolitan N. Y. territories open for experienced salesmen of chain, belt, screw conveyors, trucks, cranes, mono-rails and hoists. Liberal commissions. Kornylak Engineering—513-121 Communipaw Avenue, Jersey City 4, N. J.

PARTNER WANTED

Graduate mechanical engineer, 10-15 years' experience in materials handling and plant layout, preferably with knowledge of many different industries and some consulting experience. Opportunity to become partner. Preben Jensen Co., Factory Engineers, Chrysler Building, New York City.

EQUIPMENT WANTED

DOLLARS FOR INFORMATION

We will pay 5% commission on all leads furnished to us, which result in our purchase of used handling equipment, such as fork trucks, pallet trucks, cranes etc. Inform us of such equipment for sale and we will pay you commissions equal to 5% of purchase price if equipment is purchased.

A. & A. MACHINERY CORP.
1267 Flushing Ave. Brooklyn, N. Y.

WANTED TO BUY

Bridge Cranes
Arnold Hughes Company
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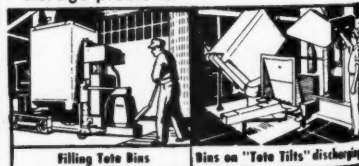
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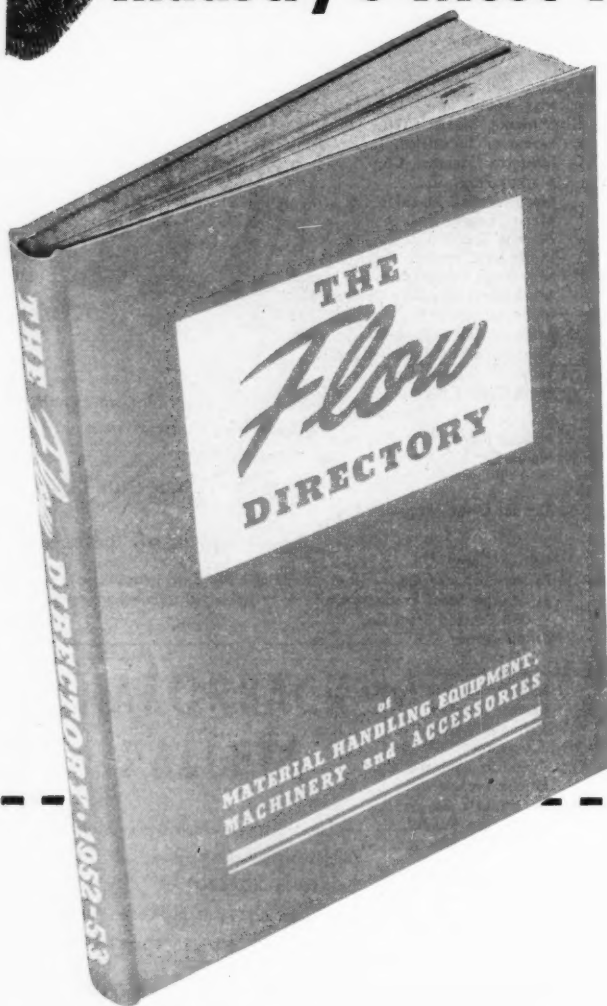
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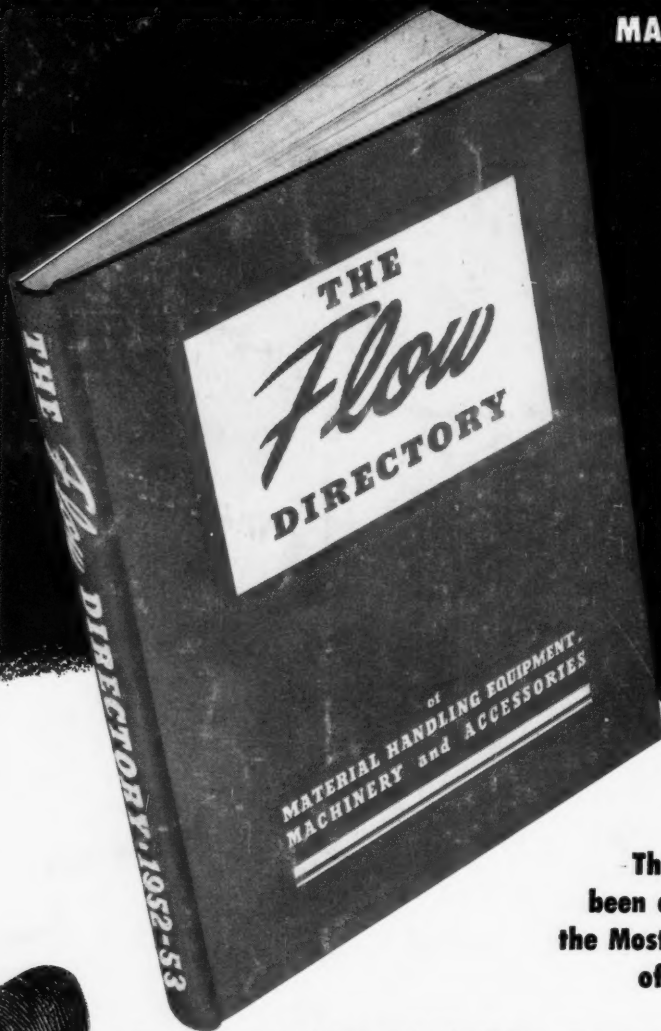
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